MACDONALD COLLEGE JOURNAL

VOLUME 7
No. 10

JUNE
1947

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THE MACDONALD COLLEGE JOURNAL

Cutting Costs and Boosting Farm Returns

Mechanization is essential to a high standard of living. This is just as true on the farm as in the city. Back in 1830 it took 57.7 man-hours of work to produce one acre of grain. In 1946 it took less than 2.5 hours, on well-equipped farms.

Of course, not all farms are sufficiently mechanized to take full advantage of this possible saving. But most are at least partially mechanized; and the present trend is for the man who has not adequate equipment to be forced off the land because he is unable to compete with the others. His high production costs eat into his returns, making it impossible for him to buy the equipment needed to cut his costs.

This vicious circle makes it impossible for him to modernize his home, to lighten his wife's work and to increase the whole family's leisure and enjoyment of living.

Many forms of mechanization have been taken for granted for a couple of generations—the gang plough, the seed drill, the cream separator, the pump, the hay mower, the manure spreader. And the advent of the farm tractor back in the early twenties led to still greater savings. One of these was simply the introduction of rubber tires for tractors, which are estimated to cut operating costs as much as 25%. The harvester combine is credited with saving up to 40% in harvesting operations. And this machine makes it possible to take the crop off in short periods of good weather, taking some of the gamble out of farming.

Many machines, such as the tractor-implement units and the smaller combines, have been developed particularly to fit conditions on small farms. But many farms are still not designed to get the most out of machines. Often this difficulty may be overcome by redividing the land so there will be less stopping and turning. And hillsides can be worked much more easily if the fields are laid out on the contour, so that the machine works on the level around the slope, instead of up and down the hillside.

Many farmers can make other changes that will put them in a better position to produce crops cheaply. For instance, a farmer may not be able to justify the purchase of a machine for a certain job, simply because the machine could not cut costs enough to cover its purchase price and operation, on the amount of work there is to be done. So he can't afford to buy the machine, and he can't afford to produce the crop without it.

When a farmer finds himself in this position it's time for some serious thought on farm management. If the work is essential for the operation or the productivity of the farm he may increase that phase of his operations to a point where a machine can handle it profitably. Otherwise, he may be able to co-operate with his neighbours in buying and using a machine; or he may have the work done by contract, as has long been the custom with threshing.

The advantages of mechanization are not limited to field work. There are numerous pieces of equipment that are coming into general use in the barn, the henhouse, the dairy and the house. Some of them, like automatic water systems, save labour; some, such as cream coolers, increase returns. And others, like bathroom equipment and electric fans, simply make life more pleasant; but that's no reason for looking down on them.

In this issue the Journal is presenting several articles on various types of farm equipment that are popular with people who have used them. The authors have tried to show what these machines can do, and have also pointed out their limitations. We hope you will find this information helpful in deciding what equipment will be most profitable under your particular conditions.

Our Cover Picture

June is the month for conventions and annual meetings at Macdonald College. Our cover picture shows a few early arrivals for the annual meeting of Farm Forums, on the steps of the Main Building.

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Science Comes to Help Out

Many farm problems can easily be solved by agricultural engineers. To meet the demand for their services, Macdonald College has expanded its course for these specialists in modern agriculture.

by **L. G. Heimpel**

CANADIAN farmers are versatile and ingenious people. They did a phenomenal job in food production during the war. Yet there is a limit to what native ingenuity and industry can accomplish; and the time has come when these valuable traits must be supplemented with technical guidance.

There is great need throughout all rural districts for more information on modern methods of land improvement through properly designed drainage systems, and the use of tillage practices which will prevent the loss of soil through water erosion. Everywhere one sees fields which are too wet to permit good crop yields except in very favorable years. In other cases, wet areas spoil otherwise good fields.

A properly designed system of underdrainage for such farms takes care of all areas requiring such improvement. Such plans are most economical because they consider total requirements, even though the whole system may not be installed at one time. Piece-meal construction without a design for full requirements often is inadequate, and requires repetition of work at a later date. To make such plans requires the service of trained men who can make surveys of the land in question, design the system of drainage, and advise as to best methods of installation.

Similar specialized service is essential in the design of new farm buildings, or in the remodelling of existing structures. The application of satisfactory ventilation systems, whether natural draft or of the forced type with electric fans, often presents problems involving a knowledge of scientific principles the farm operator can not be expected to possess. Such problems almost always involves consideration of the insulation of the building, animal population in it, and other factors in addition to the necessary rate of air change.

Farm water supply and sewage disposal systems also can be inadequate in performance and unnecessarily expensive in first cost and later maintenance, if not properly designed. Frequently one sees instances where much labor and money are expended on a gravity water supply from a good spring, but the system is a failure because of the use of too small a pipe. Yet, to calculate the flow that may be expected is a simple engineering problem. In other cases, a hydraulic ram is discarded as a failure but later investigation shows the failure to be due to faulty installation or lack of proper design of the system.

Water systems frequently are inadequate or troublesome because of the use of the wrong type of pump, or the failure to select a pump of the correct capacity. The solution must take into consideration a variety of factors in every problem, while failures of such installations are due usually to lack of consideration of one or more of these factors.

Such are the engineering problems of agriculture. Through the use of machinery in farming, it has become possible to release from food production thousands of workers for professional and industrial employment. Thus, more efficiency in food production is the very basis of our "western civilization". But the ultimate has not yet been achieved, and there must be achieved still further progress in the more efficient use of land, labor

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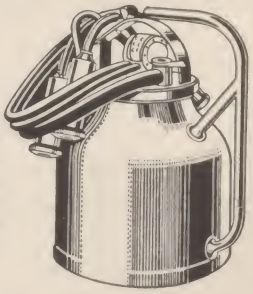

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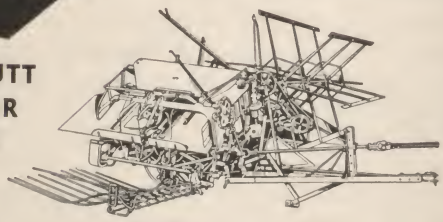

Speed in harvesting is often the key to a bigger crop . . . higher grades . . . greater profits. The answer is power . . . transmitted from your tractor to a Cockshutt Tractor Binder. It's engineered to do a big job smoothly, efficiently . . . hour after hour . . . day after day . . . through many busy harvesting seasons.

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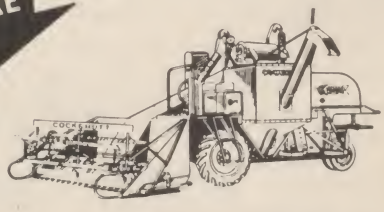

Eliminates the cost of binder twine and the expense of stooking and threshing. It does all your harvesting jobs in one simple operation. Yet one man operates it . . . simply and speedily. Available in self-propelled or tractor-drawn types.

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and machinery in farming. There is much room for improvement, but instead of leaving the farmer to work out his own problems, more help must be provided. There is great need for extension men trained in agricultural engineering all over Eastern Canada.

To meet this need, Macdonald College has extended its course for specialists in agricultural engineering. These men are trained in the design and use of all kinds of farm buildings and equipment. In all the courses, practical application of scientific principles on the farm is always the objective.

New Building Opened

To house this course Macdonald College has built a new agricultural engineering building, officially opened on June 21st. This building provides office, two classrooms — one of which is equipped with draughting tables—a modern forge shop, a machine and welding shop, a woodworking shop, blue-printing room, library and power machinery laboratory.

The power machinery laboratory provides space for gas engines and electric equipment used on farms. It will be stocked with electric water systems, milking machines, electric water coolers, grain grinders, and other farm equipment utilizing electric power. This will make possible laboratory studies in the design and power consumption of equipment, and other factors important for students in rural electrification.

With this improved set-up, it should be possible to turn out a great many more fully qualified agricultural engineers, who will be interested primarily in saving man-hours on the farm and in assisting farmers in the construction and use of equipment which will increase production with less labor, improve and conserve the soil and, finally, improve farm living conditions.

The Root of Industrialism

Some people believe it was the steam engine or the spinning jenny that brought on the industrial revolution but that's a mistake. In fact, it wasn't really an industrial revolution at all that made possible the sudden increase in the world's production. It was an agricultural revolution; and its leader was the turnip.

This modest root has never received the credit it deserves as the basis of European progress. Back in the Middle Ages, before the turnip was introduced, most of the people worked most of the time to raise enough food to keep going. And they had to use a three-year rotation including one year of fallow to keep the land free from weeds.

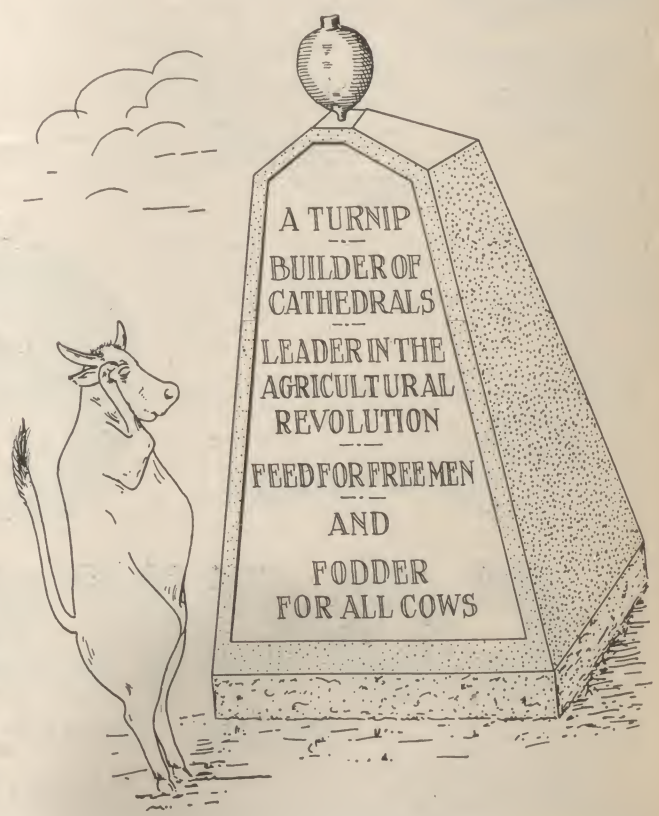
With the advent of the turnip it was used as a hoe crop to replace the fallow in weed control. This meant that 50 percent more food could be grown on the same land. And the extra production made it possible for some of the people to take time out to build cathedrals.

Thanks to the turnip, the population no longer had to hustle so hard to get enough to eat. The children grew up, instead of starving as babies, so there were more people to work. Some of them even had time to invent gadgets.

One of these gadgets was the spinning jenny, which is usually credited with bringing on the industrial revolution. But this credit is misplaced. In all justice it should go to the turnip, which made it possible for the spinning jenny to be invented. If, through some miracle, the spinning jenny had appeared before the advent of the turnip, where would it have got anybody? Nowhere, of course. For, without the turnip, where would we have got the jennies to spin the spinning jennies?

That's why it wasn't really an industrial revolution at all, but an agricultural revolution. However, it took place some time ago; so what we call it now doesn't matter very much.

This is how Dr. Kenneth Bolding, Professor of Economics at McGill University, recently shattered the myth of the industrial revolution in a talk at Macdonald College.



MAKING BETTER IMPLEMENTS

Through 100 Years..

The hand-rake reaper was first made at the Massey works in 1855.

THE EARLY REAPER had a cutting bar much like that of the present-day mower or binder. Behind the cutting bar was a tilting board which caught the grain as it fell. When enough grain collected for a sheaf, it was raked off by a man who walked behind, or later sat on the reaper. It took about five men, binding the sheaves by hand, to keep up to a reaper.

Daniel Massey in his small factory at Newcastle, Ontario, in 1847, and Alanson Harris ten years later in his little plant in a village near Brantford, Ontario, both began making reapers for the farmers in that part of the country.

Their efforts speeded up the greatest change in farming methods in history. By 1880 machine methods had largely replaced hand labor in seeding, harvesting and threshing.

Settlers poured into the Canadian West. Those vast acreages could never have been cultivated and harvested by hand. Soon great fleets of Massey-Harris implements were let loose on the prairies to send a stream of golden wheat pouring to the markets of the world.

So for 100 years the efforts of Massey-Harris have been devoted to the production of better farm implements to help the Canadian farmer to produce better crops at lower cost. They played a prominent part in developing the reaper-thresher. Today there are Massey-Harris combines ideally suited to large and small farm operations.

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Machinery and Crop Production

This combine is doing a good job on a badly lodged crop.

by L. C. Raymond

If you've a farm job to do, there's a machine to do it. Here's a round-up of machines that have proven their worth on Eastern Canadian farms, with comments on their capabilities and their limitations.

LOOKING back over the years, one cannot help being impressed with the tremendous advances that have taken place in the development of machinery as an aid in the production of farm crops. Where formerly nearly all work had to be done by hand, we find today a wealth of machines designed, not only to take out much of the hard work, but also to speed up many of the cropping tasks.

The more extensive use of machines has had the effect of greatly increasing the output per man. This has been strikingly illustrated during the recent war years where, in many cases, one man plus a good complement of machines carried out all the work on a good sized farm. Such an undertaking would have been impossible without the assistance that machinery provides.

The Small Tractor

Judging by its wide distribution, the small tractor has done as much as any other single unit to facilitate work on eastern farms. Introduced at first with steel wheels, these were fairly quickly replaced with rubber and the provision of high road speeds. There has undoubtedly been some tendency to apply the speed ploughing and cultivating—but on the whole the small tractor, either on the drawbar or as a mobile unit for belt power, has filled a need of long standing. How big the farm must be to justify a small tractor is difficult to say. It depends not only on the size of the farm but on the many services which such a machine can provide.

Machines for Soil Preparation

Much attention has been given to the design of the plough to better fit it for the basic task of soil preparation. The slope and overhang of the moldboard are now such that this implement provides a much more positive action in turning the furrow and at the same time giving a suitable pulverizing action. A variety of share types is available to suit the varying kinds of work that a plough is called on to do. Coulters also have received careful study. Special mention should be made of the jointer, which is a very worthwhile attachment in fall ploughing of sod.

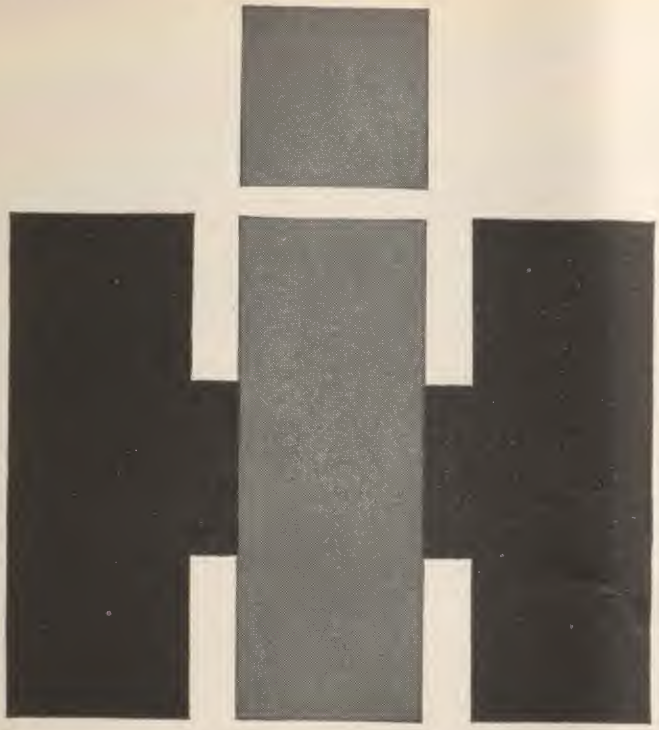
Cultivators, whether disk, spring tooth or straight tooth, are steadily being made more effective. The older single or double disks invariably left the land ridged where only a single trip over the field was made. Now this has been compensated for and a level job results. The straight tooth type of cultivator with duckfoot teeth is valued where it is desired to bring roots such as couch to the surface.

Harrows of various types serve a very useful place in soil preparation. The spike harrow with ridged teeth is the most universal farm type. There is also the adaptation of this where the spikes are so mounted that, by means of a lever, they may be tilted through forty-five degrees, thus reducing the intensity of the bite. This provision makes them adaptable for cross harrowing such crops as corn after the plants are above ground. Chain harrows are highly valued by many farmers. They do a great job at pulverizing lumps or shaking out clods. On specialized farms there is justification for a weeder which can be used to control weeds in inter-tilled crops.

The ordinary farm roller has not changed a great deal in design for many years, but special types of rollers and packers have been introduced. Mention might be made particularly of the cultipacker which provides more pressure and is specially valuable for pulverizing a lumpy soil.

Fertilizer Distributors

Machines for distributing fertilizer have been slow to reach the degree of perfection attained by many of the other farm implements. This has in part been due to the variable physical character of fertilizer in the past. This is now very largely overcome and free-flowing mixtures are available for most grades. Many farms do not justify buying a separate machine for the purpose and can well get along with the attachment



THIS SYMBOL MEANS INTERNATIONAL HARVESTER

IT MEANS MORE from the good earth. It means farm tractors, farm machines and improved methods that help conserve the vital soil and produce bigger and better crops with less labor.

It means motor trucks to transport raw and finished commodities . . . industrial tractors to help build airports, power dams, highways, homes, factories and commercial buildings.

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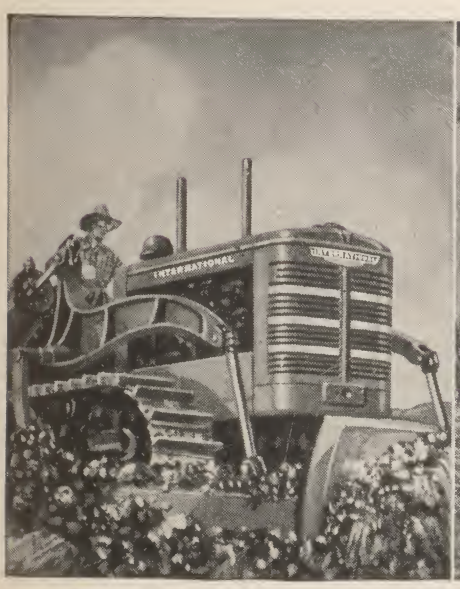
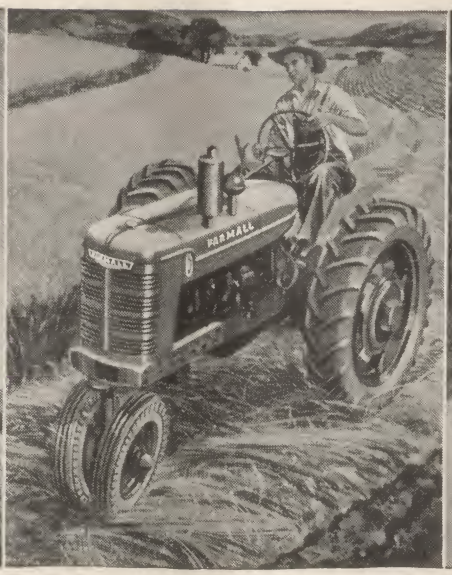
Above all, the IH symbol means this: An organization that builds long life, efficiency, economy, and freedom from toil into its products, that each may contribute to better living for us all.



International Industrial Tractors and Power Units to increase production and decrease cost.



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that can be bought with the seed drill. The positive nature of the delivery and the ability to calibrate the output have greatly improved.

Recently there has been placed on the market a small distributing machine, holding up to about four bags, which can be drawn behind the tractor. This is a broadcaster taking its power from its own wheels. It can also be used for grain or grass seed and is useful where the larger machines cannot conveniently be used.

There is a growing recognition that fertilizer machines should provide for more definite placement. Wherever the application is a heavy one, putting seed and fertilizer together is likely to cause trouble. Where moisture is likely to be lacking broadcasting fertilizer and its placement on the surface will not give best results. Of the ordinary farm machines the only ones now regularly equipped with a sub-surface banding device are the corn and potato planters. Continued study of fertilizer placement is likely to result in redesigning of some of the future farm machines.

Seeding Equipment

It has become almost universal practice—certainly in any section where dry conditions are prevalent—to use a disk drill for seeding grain. The reasons are fairly obvious since the drill permits positive placement of the seed down to moisture. Most drills are equipped with a separate seeder for the grass and clover mixture, this seed being broadcast behind the drills, and covering effected by chains. In general, these machines do a good job if care is taken in calibrating the machine before starting to seed. The grass seeding device is not as satisfactory as the provision for grain. Unless care is taken there is danger of placing very small grass seed too deep for complete germination. Some growers make a separate operation of seeding the grass mixture to avoid this difficulty. There is a distinct need for improvement in this respect in our seeding machinery.

There's trouble for potato bugs in this power-driven spray.

Harvesting Implements for Seed Crops

The grain binder which has been developed to a high degree of excellence and which has for so long held a very prominent place in grain harvesting is giving way gradually to the combine. With the combine, the cutting and threshing are accomplished in one operation thus replacing the thresher altogether and saving a great deal of labour in the process. This is not quite as simple as it sounds, since the straw is left on the field and has to be gathered separately.

The combine, in its various sizes, has been widely adopted wherever conditions and the acreage warrant its use. In many seasons with bad harvest weather it has enabled harvesting to be done much more satisfactorily than with the binder and subsequent stooking. A few consecutive fine days that would not suffice to dry grain in stooks for threshing often suffice for removing the crop with a combine.

The combine has proved to be very useful in harvesting seed of forage crops—notable red clover. Harvest of this crop gets into short days and much dew. On the short but fine, dry days when the crop is ripe, the combine fits in very well.

Forage Harvesters

Naturally enough, much thought has been given to the development of machines calculated to reduce the labour of harvesting our various forage crops. This represented some of the most laborious work of the farm. It is a far call from the old days of the hand scythe. The hay mower was first introduced with a cutter bar of four to four-and-a-half feet in length. This is now up to six or seven feet and the machine so built that the traction is less for the larger type. The introduction of the side delivery rake and the hay-loader—two machines which largely complement one another—did a great deal to lessen the load of hay harvesting. In view of the increased load in handling grass and clover for grass silage, it has been necessary to strengthen the older type of loader. The raker-bar type has been the answer and has proved adequate for the purpose. The very local development of the divided hay rack, to permit loading one half at a time, again saves labour in unloading. Mention should also be made here of the lower types of wagons, usually on rubber, which are gradually replacing the much higher wagons, providing both easier loading and traction.

In the New England States the use of dump trucks on the farm is becoming quite common, the saving in travel-time to and from the fields being an important feature while with some crops the ability to dump the load is equally valuable. Trucks on Quebec farms are as yet most uncommon, but will almost certainly appear in the near future.

Where production is on an extensive scale, the buck-

The modern plough can make a good job of turning under even a fairly heavy growth of green manure.

rake has assumed some importance. This device can be home built and attached to an old car or a tractor. It is not generally as adaptable where the hay has to be taken into a barn as it is to facilitate gathering hay for a field stack or moving grain to a thresher.

The one machine that is today attracting most attention in harvesting a dry forage crop is the pick-up baler. This machine only reached the market in any quantity during the war years. Its exact place and limitations have not yet been fully established. Where labour is scarce and inexperienced it has served a useful place on many farms. Once the kinks are ironed out it may by expected to find fairly extensive use where the tonnage of hay to be stored is large. Not the least advantage this method offers is the saving effected in storage space.

Silage Harvesting

Until very recently, silage almost invariably meant corn. Corn still represents almost the only crop planted for silage. The standard equipment for harvesting was the corn-binder and the cutting-box with a blower attachment. Few improvements on these two machines have reached the average grower. In a few instances farmers have made use of the sheaf-loader, which elevates the sheaf of corn direct from the binder to the accompanying wagon. Machines are available which cut the corn from the field and then immediately pass it through a cutting box on the same machine which cuts the stalks into ½-¾ inch lengths ready for the silo, and elevates it to a wagon alongside. While these machines are efficient, their price seldom warrants their use except by very large growers.

There is an increasing tendency to produce grass silage. This crop is difficult to handle with ordinary farm equipment. Many adaptations can be made to lighten the load, but it still represents a lot of hard labour. Combined forage harvesters are now making their appearance which are adapted to handle almost any forage crop. As with the corn harvester referred to, they prepare the crop, in the one operation, for the silo.

(*Continued on Page* 17)

Lightening Work with Livestock

Modern equipment saves back-aches and time. But before we can get the most out of this equipment, our stables need to be adapted for its use.

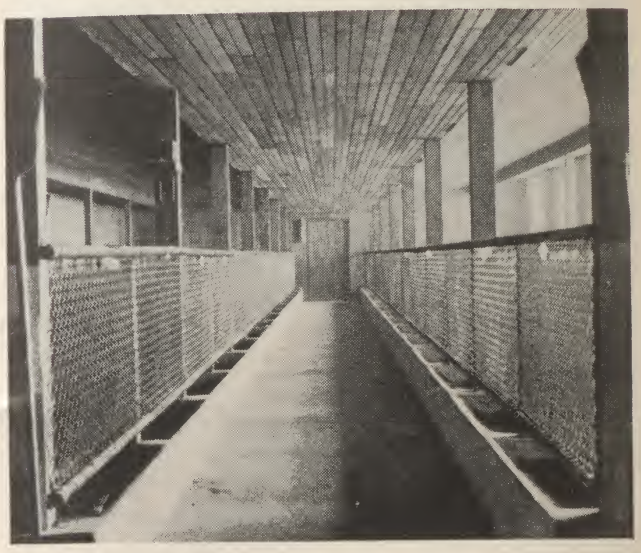
by L. H. Hamilton

MECHANIZATION of the many operations on our farms in Canada has been progressive and continuous since the invention of the first binder. These many inventions and new machines coming on our markets have had a stimulating effect on agriculture. They have made it possible to accomplish more with less labour. But, to make full use of these new devices and machines, and to keep overhead costs at a reasonable level, it is necessary to plan operations carefully.

On the strictly livestock farm, mechanization has not made such spectacular headway as on the more highly specialized and single crop farm, such as those that grow only wheat. Nevertheless, much has been done to reduce manual labour. Milking machines have increased dairy production and have greatly reduced the labour involved in the twice daily chore of milking. New types of cooling and cleaning equipment have not only made it unnecessary to store ice, but have improved the quality of product and consumption per capita.

Not many years ago it was thought that some 25 or 30 cows were necessary before a milking machine was justified, but now it is quite common to find milking machines on many farms with half that number. This has been made possible to a large extent by the introduction of new forms of power. The hydro, for instance, not only makes it possible to operate many machines, but by providing hot water in the dairy it makes the chore of washing up considerably less burdensome. In addition, the automatic pump keeps fresh water before the stock at all times. The older system of the hand-operated pump, with its many attendant difficulties and labour, is gradually disappearing.

In addition to the milking machine, power either in the form of electricity or the tractor, has made it possible to provide better feed with less labour. Take, for instance, the feed grinder. Less than 25 years ago the majority of farmers had to spend considerable time hauling feed to the mill for grinding. This involved a large amount of time and expense. Horses had to be shod, wagons and boxes had to be got ready and the grain handled several times before it was ready for



The troughs in this Danish style piggery are very convenient; and dung alleys behind the pens make it much easier to keep the house clean.

feeding. Now this can be done at home. And speaking of home, electric fences offer us a cheaper, easier way to keep our livestock there.

Hay balers and ensilage cutters along with power, have made it possible to harvest hay more effectively. In many cases and in wet seasons, the first cut can be put in the silo for winter feed. Formerly a great amount was simply wasted. Corn for silage can now be used over a wider area. In addition, it is surprising how many farmers are considering corn as a grain crop. With the numerous new hybrid varieties which ripen even in fairly short seasons, and the new harvesting equipment available, it seems quite reasonable to expect corn growing for grain to expand.

Needs Still Not Met

While much has been done to relieve the farmer of the heavier work connected with the growing and harvesting of his crops and the preparation of his land, there is still great opportunity for new devices to help in the feeding and management of stock. Perhaps the most pressing need is in barn and stable design. Something has already been done in the matter of the materials used. Steel barns have become more common, and steel equipment is replacing the old wooden structures, but many are still not satisfied.

Organizing the stable for convenience and economy is of primary importance. It is one of the things one notices when travelling about. Feed carriers, litter carriers, self feeders, automatic water bowls, and various items of minor equipment, all help to add to the efficiency of the modern farm. They should be more general; and they will be when they become more adaptable or the

present stabling arrangements are changed to accomodate them. A good example of improved design is the Danish style piggery with its dung alley along the back of the pens. It cuts down on work and makes it much easier to keep pigs reasonably clean.

Many other items of equipment and machinery could be mentioned to indicate the present trend towards mechanization. For instance, the handling of manure is one of our biggest and most laborious problems. We have manure spreaders, and manure forks for loading are being developed. In fact, some of these machines are already in use; but they are still in an early stage of development. When they prove effective, an important labour problem will have been solved. This can be expected in the near future.

Don't Neglect the Horse

However, regardless of the source of power or the many new types of equipment which are being evolved, the average farmer is faced with the fact that he cannot afford even half the machines that might appear necessary or desirable. For instance, we are not too farsighted if we neglect the horse as a source of power. With a great many farmers, and more especially on the smaller farms, the horse is still the most economical source of power for many kinds of work. In relatively prosperous times the horse is neglected and no claim is being made here that machines are not necessary or desirable, but it would seem the part of wisdom to explore more fully the possibilities of horse power before we abandon the horse as a farm animal.

One of the chief drawbacks to horse power is the timeliness and speed required for certain operations. Getting the job done while the weather is right will always be an important consideration; but with lowered prices for farm crops and products, economy of operations may require more consideration, and the four-horse team might find an important place in future farm operations.

At a recent meeting in Toronto an Ontario farmer expressed the opinion that there would be plenty of farms for sale in the near future. He went on to say that the reason for this was simply too much mechanization and overhead. Most people would probably not agree with this, but the problem of overhead is important. It can be solved to some extent through custom work. This method of increasing the use of farm machinery has a great deal to commend it at present. It has been used effectively for a long time for threshing and a number of other services, but it has not become common for general farm tillage and harvesting operations.

One of the important reasons for this is the question of time. When the crops are ready, most farmers like to get at them. They become restless waiting for their neighbour to finish before they get the machine. Co-operating in the purchase of machines among neighbours may also help, but here again the opportunity is restricted to a few machines.

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Cutting Costs With Hydro

by J. H. Cooper

THE extension of rural power lines should do much to speed and lighten work in the home and around the farm. And if the power is applied where and how it can be used to best advantage, its cost is surprisingly low.

A great many people still think of electricity mostly as electric lights. This is certainly an important use; but while important for lighting, electricity has moved on to take over many other useful jobs.

Even in lighting, a big change has occurred. The older incandescent light is being replaced to some extent by the newer fluorescent type, due to its lower power consumption per light unit, and the absence of shadows.

Electricity may be used economically as a source of heat. In the farm home these uses may be the flat iron, electric range, toaster and hot-water heaters; these are a few of the many and varied applications. About the farm may be included chick and pig brooders, incubators, pasteurizers, water heaters and soil heating and sterilizing cables. The ease of handling, accuracy of control, freedom from fire hazard, and general cleanliness are factors to be considered in comparison with other heat sources.

Many uses may be found for electric motors in relieving home and farm work. An electric water pump is generally one of the first things that is wanted, to supply water at the tap and for sanitation purposes in the home, and to water cattle and horses in the stable. A reciprocating, shallow-well pump will fit most needs; with medium suction lifts a "jet" type pump is recommended; for greater depths a "deep-well" pump should be used.

Other uses in the farm home are refrigerators, frozen food cabinets, "quick-freeze" units, vacuum cleaners, fans and sewing machines.

Outside the farm home there are many applications. Plans are available for the construction of home-made hay hoists powered by electric motors, which are safe to use in the barn. This is also true of grain elevators and grain handlers. An electric feed grinder and feed mixer will ensure proper feeds at all times. Stables may be ventilated by means of one or more electric fan units where the natural, or gravity, ventilation does not work satisfactorily.

Many farm problems can easily be solved by agricultural engineers. To meet the demand for their services, Macdonald College has expanded its course for these specialists in modern agriculture.

Electricity can toast bread, keep food cool, pump and heat water, clean floors and furniture, and do many other jobs to ease work in the home. It can also do many useful jobs around the barn and the dairy.

Power Dries the Hay

Considerable interest has been aroused by the "hay finishing" process which allows damp hay to be placed in the mow and air circulated through the moist hay, reducing its moisture content to a safe value. This is especially important when weather conditions are unfavorable for field curing, and might result in complete loss of the hay crop. Centrifugal fans of suitable size and design are driven by electric motors varying in size from 3 to 7½ horsepower; 5 to 7½ h.p. motors are recommended for this purpose, as 3 h.p. motors have been tried out but are considered too small for best results. It is true that hay produced in this manner will be more costly, but its feeding value is considerably above that of field-cured hay.

The motor which powers the blower may also be used to run the usual farm machines not provided with attached motors. Examples are silo filling, hay hoisting, wood sawing, grain grinding, and hay chopping.

A ¼ h.p. electric motor will supply sufficient power to drive any machine which was designed for hand operation. If such a motor is portable, it may run

a small butter churn, emery wheel, post drill, cream separator, fanning mill, etc.

Breakage of some vital part of a machine may delay some farm operation at a critical time. Farmers with mechanical ability and aptitude have desired some tool whereby they could repair the broken part in their own shop, eliminating costly delays. Such a tool is now on the market in the form of a "limited input" arc welder, which may be connected to most 220-volt, single phase, 60-cycles without causing inconvenience or annoyance to other users on the same line. With a short period of instruction and practice, he should be able to execute welds in a satisfactory manner.

The least is not the cheapest

Because of the method of charging for electricity it is false economy to try to use only the lowest amount paid for under the contract. Quebec farmers, when they used an average of only 479 kilowatt hours in 1946, were paying considerably more per unit of work than Ontario farmers who averaged 1,881 kilowatt hours. The reason for this is found in the method of charging for electrical energy.

Practically all farm rates are now of the block, or step type. The current used in the first of the period, or the minimum charge, is at the high rate, that used at the end of the period at lower rates. Too often the minimum charge is viewed by the consumer as a maximum which he tries not to exceed. Actually, the electricity which is obtained in the later steps is cheaper and will do work at less cost than that purchased in the first step.

Electricity should be sold on its merits and its ability to perform the required tasks and chores in competition with other sources of power. The feasibility of extending rural power lines will depend upon the cost of such construction and generation of electricity; it will also depend upon the revenue obtained from customers served. Construction costs have been reduced by raising distribution voltage from 2300 volts to 4600 and 6900 volts, which have higher carrying capacity than the 2300 volt system. Other improvements are better conductors, repeater switches, and circuit breakers, which reduce cost of operation.

After the power company delivers the electricity to the farmer's gate, he is left more or less to fend for himself with no adequate plan of his present or future needs. Lights may be installed in the home and in the stable; the radio may be wired and possibly an electric water pump installed, but that may be the extent of the use of electricity. Such loads do not make rural lines practical. It will be too expensive for the farmer and a poor investment for the power company. To ensure best returns from the electrical system, it should be used wherever and whenever it is economically justified.

Among the requirements for advantageous use of electricity are:

(1) adequate wiring;
(2) reliable electrical appliances;
(3) maximum use.

The wiring plan should cover expected future loads as well as present loads. Nothing is more expensive than having to tear out a wiring system and replacing with one designed to carry the increased load, which a little thought and planning could have foreseen. The

(*Continued on Page* 19)

A Quiz on Conservation

How much do you know about soil conservation? Here's a good chance to test your knowledge, by comparing your idea of what conservation terms mean with the definition used by the top U.S. authority on the subject.

by J. S. Cram

SOIL conservation is a term that's being bandied about a great deal. We hear a lot of talk about erosion, and about various techniques used in controlling it. But do we know what these things really mean in terms of farming?

In case you want to see how much you know about conservation here's a list of terms commonly used, with an explanation for each. These are based on the definitions used by Dr. Hugh Bennett, Chief of the U.S. Soil Conservation Service.

Soil conservation — Use of the land to produce the greatest amounts of the things most needed, and at the same time protect it so it will not lose its productiveness.

Erosion — The breaking down and carrying away of soil from fields by winds or water. It has ruined or almost ruined 282 million acres of what was once good crop land in the U.S., and has damaged another 775 million acres. Erosion is also a big problem in Canada — just how big we don't know.

Sound land use — Using every acre according to its capacity, with methods that maintain productiveness.

Carrying capacity — The amount of livestock an area of pasture will feed through a grazing season, under average conditions, without permanent damage to land or grass.

Pasture development is one of the most important means of soil conservation. Here a fine crop of alfalfa is improving the land and providing a Shorthorn herd with excellent grazing.

Grazing season — The part of the year animals can be profitably grazed without permanent damage to land or grass.

Farm conservation plan — A plan for use of all land on a farm according to its needs and capacity, and the farmer's desires and facilities.

Soil-saving dams — Dams built of earth, rock or other local materials, across gullies or natural watercourses to cash silt, slow down run-off and reduce erosion.

Run-off — The rain or melted snow not absorbed by the soil and not lost by evaporation, which runs off the land into neighbouring drainageways, often carrying soil with it.

Conservation technicians — Specially trained men who assist with the job of treating all the land of farms according to its capacity to produce and according to its needs.

Exhaustion of plant food — Excessive removal of plant nutrients from the soil in the crops taken off the land, without provision for replacing them.

Permanent pasture — Areas used continuously for grazing or hay.

Contouring — Working sloping fields around hillsides on the level, with furrows curved to fit the lay of the land, instead of straight furrows up and down hill.

Contour furrowing — Ploughing furrows on the level to hold rainfall so it can help the growth of pasture grasses.

Terracing — Building up low ridges of soil across sloping fields to intercept run-off.

Diversion channels — Channels with a ridge on the lower side, the ridges being farther apart and sometimes larger than terraces, to divert damaging or wasteful run-off.

Strip cropping — Planting strips of grass or clover between strips of clean-tilled row crops on the contour, to hold water and keep it from eroding the strip below.

Mulching — Leaving crop residues and soil-improving crops on the surface instead of turning them under, to protect the soil from erosion and baking, and help it soak up more moisture.

Crop ratation — Alternating various crops on a piece of land to keep the soil productive and improve it.

Cover crops — Dense crops that prevent erosion of cultivated areas at times when there are few other plants to protect the land.

Fertilization — Use of manure or commercial fertilizer on land that needs additional plant food to stimulate good growth.

Drainage — Removal of excess water from wet land by ditches or tile drains.

Overhead irrigation — Applying water with sprinkler systems to help the growth of crops.

Water spreading — Controlled spreading of run-off water — from the foot of slopes, and from gullies and washes — over nearby land that needs it, usually through the use of dykes or dams.

Pasture development — Developing pastures by seeding down to selected grasses and legumes, fertilizing, liming, draining, fencing for grazing control or whatever may be required.

Perennial hay production — Using land not suitable for cultivation to grow hay.

Gully control — Using plants or mechanical measures to stop eroding gullies.

Woodland harvesting — Cutting trees for lumber, pulp and other uses, according to sound forestry practice, to sustain yields and promote rapid growth.

Improvement cutting — Cutting woodland to encourage growth or for watershed protection.

Pond management — Use of suitable measures to protect ponds from erosion and filling up, and aid in production of fish and other wild life.

Shelterbelts or windbreaks — Plantings of trees and shrubs in strips, to deflect wind currents and reduce wind erosion and snow drifting.

Management of odd areas — Development of odd portions of farms, such as fence corners, rocky places and potholes, for the encouragement of wild birds and animals.

Chemical Weed Killers

Of the various chemicals tested for destroying weeds among desirable plants at the Dominion Experimental Station, Fredericton, N.B., none has shown as much promise as 2,4-D. This chemical is promising because it is relatively cheap, selective in action, non-poisonous to warm-blooded animals, non-corrosive and non-inflammable, says T. C. Chiasson, Dominion Experimental Station, Fredericton, N.B.

It has been found that 2,4-D will effectively destroy broad-leaved lawn weeds such as plantain and dandelions without injuring the grasses. Ninety to ninety-five percent of these weeds have been killed by one application of a solution containing only 0.1 per cent 2,4-D at the rate of one gallon per square rod. It has also been found effective in destroying some pasture weeds such as buttercups and dandelions, as well as some weeds in grain including wild mustard, lamb's quarters and lady's thumb.

There are, however, limitations to the use of 2,4-D as a weed killer which should also be considered. For example, it will kill desirable as well as undesirable broad-leaved plants. Vegetable crops, potatoes, turnips, clovers alfalfa, flowers and trees are all susceptible. This limits the use of 2,4-D to such places as lawns or greens, pastures, roadways and crops such as grain. It does not destroy narrow-leaved weeds such as couch grass and barnyard millets, at least if used at concentrations that will not kill desirable crops. It should also be used with caution on grain crops as there is a possibility of injuring the grain even at ordinarily recommended concentrations. If the grain crop has been seeded down to clover its use is not advisable.

For best results 2,4-D should be applied in the form of a fine spray. The weeds that emerge after spraying will escape injury. Nevertheless weeds are much more susceptible when young and growing vigorously than when matured. For lawn weeds such as plantains and dandelions spraying will be most effective about the middle of June in the Maritime Provinces. For grain crops, spraying should be done before the grain plant reaches the shock-blade stage and before the weeds are in bloom.

Concentrations used will vary with the type of weeds to be killed. For lawns a concentration of one part 2,4-D to 1,000 parts of water will give the best control. This is the standard concentration recommended by various manufacturers of products containing 2,4-D. Although these products vary considerably in their 2,4-D content, if used at the recommended rate they will apply about the same amount per acre.

For grain crops, experimental work to date indicates that concentrations of one-half the strength used for lawns is probably sufficient. Heavier concentrations are likely to injure the grain crop by burning the leaves, and will possibly increase the severity of rust attacks.

Spraying will be most effective in a clear, bright day after the dew is off and rain does not appear imminent.

The sprayer used for spraying 2,4-D must be thoroughly rinsed out, especially if it is to be used at any time to spray crops susceptible to 2,4-D. Repeated rinsings are necessary and if possible it should be rinsed with a solution of one pound trisodiumphosphate in 20 gallons of water. However, it would be safer never to use a sprayer that has been used for 2,4-D to spray susceptible crops.

Quality Paramount in Holland

There's no doubt that the Canadian delegation attending the International Federation of Agricultural Producers' conference at The Hague have been impressed with what they have seen of agriculture in Holland. This fact was clearly emphasized by Hon. A. W. Mackenzie, Minister of Agriculture and Marketing for Nova Scotia, who represented the Maritimes on the Canadian delegation, and who was one of those interviewed by the BBC following the completion of the farm tour arranged for the delegates by the Dutch Farmers' Union.

Poultry Questions Answered

by W. A. Maw

Q.—Does the number of eggs produced by the individual layer influence the vitamin content of the eggs?

A.—High producing layers need more vitamins in their ration than do low producing hens, in order to maintain an equal nutrient value in the eggs laid. Research done at Kansas State College of Agriculture shows as much as 32 percent more vitamin A in the yolks of eggs produced by the hen laying 100 eggs per year, as compared with 200-egg hens. Laying and breeding rations should therefore contain a margin of safety in vitamin content over the recommended requirements per pound of feed: Vitamin A, 3300 International Units; vitamin D, 450 A.O.A.C. Units; vitamin G (riboflavin), 1.3 milligrams; 7 milligrams pantothenic acid; 1.6 milligrams pyridoxin; '07 milligrams biotin.

Q.—Is the all-mash chick starting ration most satisfactory for early growth?

A.—The easiest way to ensure that the chicks are getting a completely balanced ration is to feed an all-mash ration. Although some producers prefer to feed chick scratch grain during the first few days, the chick requires a high protein ration fully fortified with vitamins and minerals. The all-mash ration should supply all feed needs during early growth. Grain may be used after four or seven weeks of age. It pays well to give the chicks a good start by feeding a complete ration for seven weeks.

Q.—Does breeding for egg production influence rate of maturity in the pullet?

A.—In breeding for increased egg production, the selection of birds for early maturity is one of the important steps. The early layers are usually the heaviest layers, but care should be taken to ensure that such early-maturing individuals are also well matured in body size. Small-bodied birds tend to lay small eggs. Early-hatched pullets having the early-maturing characteristic, will lay a large proportion of their total year's production during the season of high egg prices.

Q.—How should broody turkey hens be handled?

A.—The broody turkey hen should be broken of the habit, in order to have her lay a second clutch of eggs. A simple method of breaking the habit is to have a pen without nests available for such hens. Place a male with the broody hens to ensure fertility when the hen is ready to lay again. Feed only on laying mash, grit and shell and water during this period.

Q.—How many turkeys per acre of pasture range during growth?

A.—Turkeys consume a large amount of pasture forage when on range. Unless the birds are moved periodically across a range area, the forage will be cleaned off to the roots of the plants. Such handling also results in soil contamination. To prevent the loss of the pasture sod by overgrazing, it is recommended that, where turkeys are confined to a definite area for the growing season, not more than eighty individuals per acre be ranged. The roosts and hoppers should be moved occasionally during the growing season.

Q.—What is a satisfactory nest size for trapping turkey hens?

A.—Trap-nests for turkey hens are made similar in type to those used for laying hens, but they are larger in size with special height dimensions. The nest size, as recommended for all breeds, is as follows: width—14 inches; depth—24 inches; height at front—19 inches; height at rear—45 inches. The slanted top allows for standing erect in the nest and also avoids birds standing on the top of the nest. Where the hens are trapped one nest for each two hens is needed.

Q.—Do certain breeds of turkeys mature earlier in age than others?

A.—Certain breeds, such as the smaller types—White Hollands, Beltsville Small Whites and Bourbon Reds—mature from two to four weeks earlier than Standard and Broad Breasted Bronze types. The Bronze stock are larger when mature and are therefore slower in reaching full body size. Certain White Holland stock has also been developed through selection for the larger size. The smaller types are approximately mature for dressing at 24 to 26 weeks of age while the large types should be held until 28 weeks of age.

Q.—What is the simplest way to avoid having many soiled eggs?

A.—Eggs usually become soiled from being laid on the floor or in dirty nests, or from the dirty feet of the birds going into the nests to lay. Damp litter is one cause; uncovered droppings on roost boards and platforms along the front of nests, where droppings may accumulate, are another. A well-ventilated house with a deep dry litter and protected dropping boards or pits will overcome most of the difficulty. The community nest, with one opening for entrance and exit, well supplied with clean litter, will have most of the eggs laid in the nest from being soiled. In such a nest the birds walk over clean litter before settling down to lay.

Collect eggs periodically as well to avoid leaving too many eggs in a nest, which may result in broken eggs.

Machinery and Crop Production

(*Continued from Page 9*)

Heavy Equipment

This statement on farm machinery would be incomplete without some reference to the bulldozer. This is hardly a machine for farm ownership. Fortunately the government has seen fit to make a number of them available throughout the country. They can be rented for a limited period at a rate in no way excessive considering the work they can accomplish. As a means of clearing up stoney and brushy pastures, or to remove those boulders in otherwise clear fields, they can be of the utmost value. Excessive levelling with the removal of top soil should be avoided.

Comments on Farm Machinery

The list of available machines mentioned is admittedly a long one, but in no way exhaustive. The largest and most expensive types will obviously be out of the reach of any but very large farms. It is a very easy matter to get the machinery inventory out of proportion to its real worth on a farm. Many machines, though very efficient in their operation, may only be used for a few days in the year and under those circumstances will be very difficult to justify.

There is a growing tendency for the development of machinery pools throughout rural districts, which has much to be said for it. Men with mechanical leanings who will maintain a stock of the heavier and larger types of farm equipment and who will make it available for custom work, should not only find a remunerative position but will be a boon to the small holder who cannot justify the ownership of such machines for himself. In addition to the standard lines, bulldozers, combines and forage harvesters could find extensive usage.

In conclusion, it is safe to say that of all the factors concerned, machines were probably more responsible than anything else, during the recent world war, in effecting the very enviable record of farm production which was kept at a high peak in spite of the extreme labour shortage.

Correction on Flies

In the article "Oh! Those Flies!" in the May number there was an omission. Under Control A-2 the text should read: "Applying 5 lbs. of 50% wettable DDT powder **to 10 gallons of water** per 8,000 square feet.

Canadian Farmers Ask for Action

Canadians farmers have raised their voice in international circles in protest against the lack of real action in the United Nations' food and agriculture program as part of the program for world peace.

Speaking through the delegation of the Canadian Federation of Agriculture at the conference of the International Federation of Agriculture at The Hague, Holland, Canadian organized agriculture expressed deep concern over the situation. In an official statement presented by H. H. Hannam, President of the Canadian Federation and leader of the Canadian group, the delegation declared that the world farmers' organization must follow through and give support in a constructive and forceful way to the ideal of a world food program.

"The vision of more and better food for consumers and more satisfactory and stable returns for food producers, was set up at Hot Springs in 1943 as one of the first fundamentals for a peaceful era," said Mr. Hannam. "During the intervening four years nations and statesmen have been striving to develop a world food program at the international level designed to make that ideal become a practical reality.

"The activities of UNRRA, the International Emergency Food Council, two succeeding FAO conferences, the report of the FAO Preparatory Commission, the work of the International Wheat Council and Wheat Conference and the deliberations of the Trade Conference now meeting at Geneva are all related phases of that same program.

"The goal of such a program caught the imagination of organized producers in many lands. This prompted them to join in the London conference last year, that they might equip themselves to discharge in full measure the responsibilities necessarily theirs in the realm of food and agriculture.

"Our conference here at The Hague can and must follow through giving positive and constructive support to the ideal of a world food program. This viewpoint has the endorsation of the Canadian delegation. Our position at the moment may be summarised as follows:

"Reports, resolutions and declarations of policy agreed to at conferences are in themselves not enough. Good intentions must be translated into positive action. Although the nations in conferences have recognized the fundamental need of a co-operative approach to the food program they have not yet made any substantial move to alter the common trade practices and actually apply these principles to world trading in food and agricultural products.

"We fully endorse the report of the FAO Preparatory Commission. The chief recommendations of the Commission were: 1. To use the machinery of the international commodity agreement as the approach to building a trade pattern on a negotiated and co-operative basis and so protect producers and consumers alike. 2. To establish a world food council.

"Since the international commodity approach has been rather generally agreed upon, the completion of an International Wheat Agreement becomes of vital importance to this whole program. Bread is the staff of life and wheat is one of the major commodities entering into world trade. If the nations concerned cannot adopt and apply co-operative principles of trade in wheat, it is unlikely that real progress can be made in the development of a co-ordinated world food program.

"Although the recent wheat conference in London did not succeed in completing an agreement, we do not admit defeat. It can yet, and must, succeed, and we hope and trust that a wheat agreement will be finalised before the end of the present crop year.

"The lack of progress in implementing the FAO program is a matter of deep concern and disappointment to us. A continuation of this delay and trend will simply permit us to drift into the vicious nationalistic trading practices which prevailed in the period between the two world wars. People everywhere will recall all too vividly the paradox of embarrassing surpluses clogging markets, driving producers' prices to disastrous levels, while at the same time failing hopelessly to feed people who needed the food.

"A repetition of this experience must be avoided at all costs. Here lies the challenge of this conference and our International Federation."

Success Depends On Character

How well a person succeeds in life often may be traced back to his parents and their concern about training him in fundamental habits and character traits.

Only 10 percent of young people lose their jobs because of a lack of specific skills. The other 90 percent fail because of "unfriendly" habits, a survey of 1,000 young persons employed in various industries reveals. Chief reasons for their inability to hold a job are carelessness, non-cooperation and laziness. In a similar study 75 percent failed in promotion due to poor habits and personality traits. Only 25 percent remained where they were because their skills were deficient, which was the direct responsibility of schools and educators.

The home, which trains the child in the three H's—health, happiness and helpfulness, should determine right attitudes toward work and authority, responsibility, initiative and consideration for others. All of these are traits essential to success in any occupation.

Cutting Costs With Hydro

(*Continued from Page* 13)

wiring should be done by a competent and reliable electrical contractor. There is nothing in the Canadian Electrical Code which prohibits anyone from installing his own wiring system, but all work done must be inspected and approved by an authorized inspector of the Provincial Board of Electrical Examiners before being connected to the power supply. In all probability wiring installed by an incompetent or poorly trained person will not be approved and the work will have to be redone.

Reliable electrical apparatus and appliances are available, marketed under codes and safeguards which have been established by joint committees set up by the consumer, the power companies, and the manufacturers of electrical equipment. These codes warrant that equipment is up to the standard as advertised and is safe to use. In the United States this committee is the National Electrical Manufacturers Association (N.E.M.A.); in Canada a similar organization is the Canadian Electrical Manufacturers Association (C.E.M.A.). The Canadian Association recommends codes and practices to the Canadian Standards Association, who must examine and determine fitness for use.

Any piece of electrical equipment which bears the initials "NEMA", "CEMA" and "CSA" has passed the requirements set up by the above codes, and may be considered of good manufacture and up to warranty. Sometimes electrical equipment is placed on the market which does not conform to the above codes; but if produced by a well-known or reputable manufacturer it may be safely used.

In conclusion, the farmer should strive not to see how little electric current he can use, but to obtain the most advantageous use of electricity on the farm. Give it a chance—it is a ready and willing worker.

Lightening Work With Livestock

(*Continued from Page* 11)

Perhaps the best answer to this problem lies in the development of more efficient farmers capable of handling larger units with more labour and equipment. This involves more education and ability. It further involves more efficient animals. We can be justly proud of our achievement in this connection to date, but we must continue with improvements at an even faster rate.

Developments in this line mean more specialization. Specialization means more efficiency, and thus more opportunity for the continued development of machines. There is still plenty of opportunity and a great need for more equipment on a high percentage of farms in eastern Canada.

Other Countries' Methods Seem Strange to Us

Some farming practices which seem strange to Canadians were described by Dr. T. M. Stevenson, Dominion Agrostologist, when he told the Agronomy Club at Macdonald College about his trip through Britain and Scandinavia.

A new technique in overcoming deficiencies had been developed at East Malling in England. Suspecting soil deficiencies when a cherry orchard began to die out the workers tested the soil, but it seemed all right. However, they made tissue tests of the trees and discovered they were deficient in iron, manganese and nickel. By treating the soil and spraying the trees they brought up the nickel and iron levels in the trees, but not the manganese. So they bored holes in the trees and put in tablets of manganese sulphate. The trees quickly recovered.

At Romney Marsh, when a magnesium deficiency showed up in wheat and root crops, the plants were sprayed with magnesium and promptly recovered.

At Macaulay Institute near Aberdeen tissue tests were also being used; but workers considered that both tissue and soil tests were needed to show the exact trouble in plants.

CO-OPERATION AND MARKETING

A page of interest to members of farmer's co-operatives

Fund for Co-operative Research, Special Projects Being Set Up

A trust fund for the development of special projects related to the co-operative movement, and to promote research work and co-operative education, is to be set up under the name of "Co-operative Development Foundation", it has been announced by the Board of Directors of The Co-operative Union of Canada. The fund will consist mainly of donations, special grants and bequests made to the foundation by persons or organizations interested in the further development of the co-operative movement in Canada.

Decision to set up the fund was made at the Canadian Co-operative Congress, when the delegates passed a resolution stating that it was "desirable that money should be available to finance special projects, such as co-operative education, research, scholarships, radio, cultural and other activities" and giving authority to the Board of Directors of The Co-operative Union of Canada to establish such a fund.

The Co-operative Development Foundation will be administered by five trustees, one of whom will be the president of The Co-operative Union and the others of whom will be named by the Board. Ralph S. Staples, President of the Union, and A. C. Savage, Vice-President, have been named to a committee which will establish the Foundation in consultation with the Board and the solicitor of the Union. Amounts contributed to the Foundation will be used to foster only non-commercial programs. The funds will not enter into the current finances of the Union.

The Foundation, in addition to making possible various cultural and educational projects which could not otherwise be financed, is designed to meet the desires of sympathetic organizations or persons who wish to foster co-operative programs by direct grants, insurance benefits, or legacies.

Farm Labour to Be Handled Through Co-operatives in Ontario

The first Farm Labour Co-operative in Ontario was organized recently in the village of Clarkson, just west of Toronto. This marks the beginning of a new movement in connection with the farm labour camps which have been an important factor in providing help for fruit and vegetable growers, and it is expected that some fifteen more co-operatives of this type will be chartered this season.

In the past, the Dominion and Provincial governments have carried the entire cost of constructing and operating farm labour camps, under the jurisdiction of the Ontario Farm Service Force. As a step towards putting this work on a peace-time basis, a new arrangement has been made this year. The Dominion and Provincial Governments will bear one-third of the cost of all construction of new farm service camps, with a growers' co-operative contributing one-third. Where there are camps already in existence, a plan has been worked out for the growers to pay a nominal sum for taking over the property. Under the agreement, the government equity in the camps is held for three years, at the end of which time the property will belong entirely to the co-operative.

These camps will remain under the supervision of the Ontario Farm Service Force, which will also recruit the workers for them, largely from the ranks of high school students. The Ontario Farm Service Force will be responsible for providing a camp mother and labour secretary, but the other staff expenses and operating costs will be paid by the co-operative, which will collect board from the workers in the camps.

The significance of this new movement is that whereas, in the past, the governments have taken the entire responsibility for the Farm Service Camps, now the growers are taking over that responsibility.

New Record for Co-op. Business

During the 1945-46 crop year a record number of farmers bought supplies and sold produce co-operatively, it is disclosed in a report just issued by the Economics Division, Dominion Department of Agriculture. In the same period, their volume of co-operative business attained a new record.

Preliminary statistics collected by J. E. O'Meara, who compiled the report gives membership in farmers' co-operatives as 789,408, compared with 739,604 in the

1944-45 crop year. The Division emphasizes that these membership totals are greater than the number of individuals in co-operatives, as a farmer may, and often does, belong to more than one organization.

Further, comparing co-operative activities in the two crop years, the number of farm co-operatives reporting has increased from 1,824 to 1,905, with additional organizations expected to be heard from before a final report is issued. The Division estimates that in addition to these farm co-operatives there are approximately 2,500 credit unions in Canada together with many other associations engaged in such co-operative services as housing, telephone, medical, transportation and fish marketing.

Total business transacted by farmers' co-operatives in Canada amounted to $585,545,170, compared with $581,842,482, in the 1944-45 crop year. This increase is attributed by Mr. O'Meara to greater co-operative buying of supplies. Co-operative marketings declined because in the latest crop year western wheat pools had only current production to sell, while in the previous year they also disposed of carry-over wheat.

Many Are Confused Over Method of Reporting Patronage Dividends

Considerable confusion in co-operative circles has arisen following an announcement made by the Department of National Revenue concerning the reporting of patronage refunds paid to customers. Some co-operative officials have interpreted part of that announcement to mean that co-operatives, in reporting their patronage payments on Forms P.D.5 Summary and Supplementary, are obliged to distinguish between those patronage payments applying to "cost of production" goods and those applying to "cost of living" goods. Such is not the case, the Department has clearly stated to The Co-operative Union of Canada.

In its announcement, the Department said: "Where a consumer co-operative sells to customers both 'cost of living goods' and 'cost of production goods', the onus is on the co-operative to make the division of the patronage dividend and show the amount that applies to each class of dividend on Form P.D. 5 Supplementary, otherwise if no division is shown the whole of the patronage dividend will be taxed in the hands of the recipient instead of just the portion which applies to 'cost of production goods'."

However, the "onus" referred to is not legally binding. The co-operative does **not have to** show a division in classes of patronage payments. But if a co-operative does show the division (which may be practicable in a few cases) the customers of that co-operative will not have to include in their taxable income that portion of their dividend which the co-operative reports as having been paid on cost-of-living goods.

MARKET COMMENTS

The chief change in markets of farm products was the increase in the price of butter. This was due to the expiration of the bonus. The rise was less than anticipated in some quarters. The price of creamery butter at the factory was 54.26 cents per pound in 1919 and 56.96 in the following year.

Supplies of butter in storage are above that of one year ago. Output is increasing. The falling off in consumption of fluid milk, though only slight, leaves more milk to be made into butter.

Dairy authorities of Minnesota and Wisconsin claim that consumers require re-education to increase consumption of butter. Some sugar authorities claim a similar need in their line.

In the meantime, food scarcity in Europe continues. "While the grass grows the horse starves", is a reflection of a peculiar but possible position. Actually, humans may starve while the crops grow, as a bread grain must come to maturity before providing calories.

While Europe is so hard pressed the United States expects, within a few days, to start harvesting its first billion bushel crop of fall wheat. Though the season has been late locally it is certainly lucky for the world that the United States have such a good crop just when it is so badly needed.

TREND OF PRICES

	May 1946 $	*April 1947* $	*May 1947* $
LIVESTOCK:			
Steers, good, per cwt.	13.03	14.46	14.92
Cows, good, per cwt.	10.13	11.25	11.65
Cows, common, per cwt.	7.47	9.23	9.30
Canners and cutters, per cwt.	6.38	8.35	8.08
Veal, good and choice, per cwt.	15.25	15.73	14.85
Veal, common, per cwt.	13.35	14.27	13.03
Lambs, good, per cwt.	—	16.13	12.35
Lambs, common, per cwt.	9.05	11.95	9.67
Bacon Hogs, B1, dressed, per cwt.	20.17	21.85	21.85
ANIMAL PRODUCTS:			
Butter, per lb.	0.38	0.41	0.49
Cheese, per lb.	0.22	0.23	0.25
Eggs, Grade A, large, per doz.	0.36	0.36½	
Chickens, live, 5 lbs. plus per lb.	0.30½	0.29	
Chickens, dressed, milkfed A, per lb.	0.37	0.35	
FRUITS AND VEGETABLES:			
Apples, B.C. Winesaps, per box	4.05	—	
B.C. Newtons, per box	—	3.75–3.80	
Potatoes, Quebec No. 1, per 75 lb. bag	2.05	1.25	1.60–1.75
FEED:			
Bran, per ton	29.00	29.00	29.00
Oil Meal (38%) per ton	—	45.25	45.25

DEPARTMENT OF AGRICULTURE

Activities, Plans and Policies of the Quebec Department of Agriculture

Grain Yields in Quebec

by Roland Lesperance

During the 38 years between 1908 and 1945, average yields of grain crops in Quebec were as follows:

Oats	27 bushels per acre
Mixed grain	27 "
Barley	24 "
Rye	16 "

These yields are fairly typical of all parts of the province, the better districts averaging, in a normal year, about 31½ bushels per acre of oats, while in the poorer districts the average is 21 bushels

These figures are low, and have not changed much ever since 1900; small encouragement to those who are trying to improve conditions. There has been a great tendency to compare the yields in Quebec with those in Ontario, where an average of 39 bushels is reported for oats, 41½ for mixed grain and 34 bushels for barley. And in making the comparison, it is suggested that Ontario farmers know something about their business that the Quebec farmer does not.

However, the question cannot be dismissed as lightly as this, and it is worth while to look more carefully into the situation and see just what the facts are.

Take one particular case, that of Eugene Roy, a French-Canadian living in Kent County in Ontario, in the sugar-beet district of Chatham. He grows the following crops on his farm: corn for grain and for silage, wheat, oats, white beans, Burley tobacco, tomatoes, peas. He feeds beef cattle, and during the past five years he has grown from 15 to 20 acres of sugar beets. He used to grow as much as 40 or 50 acres of beets, but lately, on account of the difficulty in getting labour, and the high prices he could get for canning crops, he has cut down on this particular crop.

This type of intensive and deversified farming is general in the district and, for that matter, in the dozen or so counties in southern Ontario. This region is a heavy producer of corn, potatoes, swedes and mangels, soy beans and sugar beets, these cultivated crops representing 20% of all field crops grown. In addition, fruit growing and truck gardening is well established. There has been a great deal of under-drainage done, much more than in any other part of eastern Canada. The climate is favourable and there are more than 4,000,000 acres of cleared land, on which 300,000 acres of winter wheat is grown.

Seeding can be done much earlier, and all factors favour the growth of grain crops. Twelve counties in southern Ontario, during 1944, which was a particularly good year, averaged 43 bushels per acre of mixed grain, 42½ of oats and 35 of barley. The yields in this part of the province have a considerable effect on the average for the province as a whole, and for various reasons the Ontario yields are not quite comparable to those of Quebec.

Next, take a look at the eastern district of twelve counties, with about 3 million acres of cleared land. This district is almost an island, bounded on the north by the Ottawa River and on the south by the St. Lawrence. It is a western prolongation of the Montreal plain, which it resembles more than do the southern and western districts of Ontario.

In this eastern district winter wheat is grown only on some 4,400 acres and hoed crops occupy only 6½% of the total cultivated area, as compared with 7½% and 8% in those parts of Quebec which adjoin. Fruit growing and truck gardening are much less important and hog production and poultry raising are not so extensive as in the south. Instead, eastern Ontario goes in strongly for dairy farming and large areas are given over to raising hay, oats, and mixed grain.

This part of Ontario, therefore, is much more like Quebec in its farming operations, and it is the yields in this part of our neighbour province that we should study particularly. The yields during 1944 in the counties of Beauharnois, Chateauguay, Huntingdon, Laprairie and Napierville, contrasted for those in the adjoining parts of Ontario, are as follows:

	Quebec	Ontario
Mixed grain	27	35
Oats	26½	33½
Barley	23½	29½

The difference is sufficiently large to give us pause. In order to bring our yields up to theirs, we would have to increase our yields by 30%.

If we were to take the figures for yields obtained on the farms of certain individuals, or on some of our de-

monstration farms, it would appear very easy to bring our yields into line with those in Ontario. In every part of Quebec there are certain farmers who harvest from 40 to 50 bushels of oats or of mixed grain per acre. But these results are the results of excellent farming practices.

As an example, let us take the case of Mr. Philibert Audet, a farmer in Compton county, who has gone into farm contests and who won the gold medal of the Agricultural Merit Competition last year.

Mr. Audet has increased his grain yields over the years; he seldom harvests less than 40 bushels of grain per acre, and in good years this goes up to 50 bushels and over. He has done this by careful farming practices. It must be admitted that his soil is good and his farm seldom is hit either by extremely dry or extremely wet conditions. Nevertheless, he takes every precaution to get a good crop: he plows in the fall, uses up to forty tons of limestone each year, works his land early in the spring and as much as necessary, makes generous applications of chemical fertilizer, puts manure on his hoed crops and meadows, but does not put too much on his grain fields, in order to prevent lodging. He sows varieties that are adapted to his district, cleans and disinfects his seed grain carefully, and sows his oats and barley in mixture, as he has found that this usually gives him better results.

This is why Mr. Audet's yields are so consistently high. Our soils are more acid than they are in Ontario, and there are many reasons why we must take extra precautions and pains if we are to get the biggest yields possible. But by taking those precautions, we will get results.

Quebec Students Will Study in Mexico

Pleased with the results of the special fourteen month course in dairy technology arranged for five Mexican students at the Provincial Dairy School, the "Lecheria Nationale", a Mexican agricultural organization, has requested that another group of students be accepted this year for similar training. In return, the National Agricultural School in Mexico will be glad to accept a group of French Canadian students for a short course there.

The successful students who are en route back to their homes in Mexico are Messrs. Luis Signoret, Oscar de Leon, Raul Benitez, Ignacio Ulloa and Fernando Lira. They were given a course of technical training, and spent a considerable amount of time acquiring practical experience in various dairy plants in the province.

Quebec Dairy School Grants Certificates

In 1892 the Society of Dairy Industry established a Dairy School at St. Hyacinthe. It was made a State School in 1905 and since that date has been operated by the Department of Agriculture. It is the oldest institution of its kind in Canada, and probably in North America. According to the Dairy Products Act, anyone who is in charge of making payments for fat in milk and cream, or who is chief butter or cheese maker in a factory, must be the holder of a dairy tester's certificate from this School. This provision has been in force since 1912, and Quebec is the only province in Canada with such legislation on its books. It is expected that before long a certificate will also be required of all technicians who have charge of the pasteurization process in a dairy.

During the session 1946-47 a total of 282 certificates and diplomas were granted to successful students. Three young men, who had previously graduated in agriculture, were awarded diplomas in dairy technology following a seven-month scientific course. French Canadian students from New Brunswick, Nova Scotia and Prince Edward Island were registered, in addition to the Quebec boys, and special courses were given for five students from Mexico. A number of veterans were also registered for special work.

Progress is Planned in Animal Husbandry

At the insistance of the Minister of Agriculture, an exhaustive inquiry into the dairy cattle industry is being undertaken by officials of the Division of Animal Husbandry.

The Director, Pierre Labrecque, has visited Cornell University and the artificial insemination centres in New York State, as the first move in the organizing of similar centres in Quebec, looking toward the fastest possible inception of a programme of improvement of livestock in Quebec, particularly dairy cattle. Mr. Labrecque reports a very pleasant and profitable trip.

Later, Dr. H. L. Berard, Director of the Dairy School and R. Camirand, General Inspector of Dairy Products, visited some of the larger establishments in Ontario, and also made a trip to the Dairy Department at the O.A.C. at Guelph. From this trip they brought back several new ideas in dairy installations, and saw a number of technical improvements which have been devised by manufacturers of dairy products.

Quebec Society for the Protection of Plants Meets in Montreal

The Quebec Society for the Protection of Plants was organized at Macdonald College in 1908, for the purpose of organizing action to be taken in protecting plant life against insect pests and plant diseases, to study weed control and other matters which would have any bearing on the health of plant life. The Society carries on its work from year to year with a minimum of publicity but those who are familiar with its operation realize its effectiveness in helping to control damage to our farm crops.

Quebec Fair Will Feature Youth

Each year the Quebec Fair adopts a special slogan or motto, and for the 1947 edition it will be l'Année de la Jeunesse"—Young People's Year.

Mr. Jean Charles Magnan, Director of Agricultural Education, will be in charge of the special day set aside for young people, and his programme will be built up of round table discussions, an exhibition of handicrafts, a special luncheon, etc. More complete details will be available later.

All organizations interested, such as Young Farmers' Associations, Boys' and Girls' Clubs, 4H Clubs, etc., are invited to take part in the programme.

Emergency Crops for Feed

With the season so late a good many farmers are turning to emergency crops to ensure having feed for their livestock. Buckwheat has long been used for this purpose, as it will usually produce a crop even when sown late in June. But it is not very popular, because of its low yield.

Crown millet is another crop that can be sown in the last couple of weeks of June with excellent prospects for a crop. And it yields quite well. In 1945 and 1946 on medium land Crown millet produced 1,400 pounds of grain per acre. It is seeded at the rate of 18 to 24 pounds per acre.

Fluid Milk Sales Increased

Extent to which fluid milk sales have increased in Canada is indicated in a new monthly pamphlet of statistics on this branch of the dairy industry, being issued by the Dominion Bureau of Statistics.

The first issue of this pamphlet shows that as compared with February 1939, fluid milk sales have increased 100 percent, in Charlottetown; 117% in Halifax; 67.8% in Montreal; 111.4% in Quebec; 49.4% in Toronto; Fort William and Port Arthur; 47.6% in Winnipeg; 86.9% in Ottawa-Hull; 82% in London; 176.4% in 103.4% in Saskatoon; 73% in Regina-Moose Jaw; 89.2% in Edmonton; 82.8% in Vancouver.

Bull-Nose Disease of Swine Is Described by Veterinarian

The wide spread of rhinitis, or bull-nose in swine, for the last couple of years has worried a lot of farmers. The worst part of it was that many people have little idea of what kind of disease it is, or how it affects the pig.

The needed information was recently supplied by Dr. R. C. Duthie of the Division of Animal Pathology, Dominion Department of Agriculture, Lethbridge. The term "rhinitis", he explained, simply meant an inflammation of the mucous membranes of the nasal passages and might extend to the underlying structures and accessory sinuses or the middle ear by way of the pharynx and eustachian tube. The condition might be acute or chronic. It was given all sorts of qualifying prefixes, depending on the nature of the discharges and the tissues involved. was the common cold in the head, which as is generally known, might lead to something far more serious.

In the type of rhinitis in swine which had been under study at the Dominion Veterinary Research Laboratory, Lethbridge, during the past year and a half, the growth of the upper jaw was ultimately arrested and the turbinate bones within the nasal passages destroyed. The general receding of the upper jaw, together with the uninterrupted growth of the lower jaw, caused the lower jaw to project far beyond the upper part of the face. The deformation of the mouth made it difficult for the animal to eat, and, if the animal were forced to compete for its food, it would slowly starve to death.

However, said Dr. Duthie, the disease seemed to interfere little, if any, with general health and nutrition, and the animals would do almost as well as the normal ones, if properly fed and especially if the feed was moistened. Pigs up to a weight 80 to 100 lbs. showed little difference in rate of growth, but above that weight the pigs began to fight for food at the trough and the animals suffering from rhinitis did not get enough to eat. Such pigs should be penned by themselves. A number of experimental animals were finished for market and graded A and B1 bacon.

Many theories had been advanced regarding the transmission of the disease from herd to herd and animal to animal, and from purchase of infected stock, or breeding gilts or sows to an infected boar. While all these theories were quite plausible no acceptable evidence had been offered to support such views.

Strippings

by Gordon W. Geddes

What a late season this is. Oh well! I knew the unseasonable weather last winter would mean more of the same when we should be having spring. It is rather discouraging in view of the fact that we are supposed to raise more grain this year since the West may have other uses for their crop. However two years ago when we got so much rain our first grain was planted on May 26, and we had more of it than we did last year. In fact there was enough more so that we had some left over to help last years small crop. So we haven't given up hope yet. For that matter the farmer is in a very bad way when he gives up hope for that is about all on which he can live. And if he didn't keep right on working in the hope that things would come his way next year, that's all the rest of the world would have to live on.

And as the quality goes down in the things we keep paying higher prices for, the consumer expects better quality in the farmers' products. We can no longer get by with stories like the boy told the grocer. He was trying to sell the latter some apples and was asked if they were hand-picked. His reply was 'Oh sure, we knock 'em down with a club and then pick 'em up by hand.' Speaking of quality, there is a lot of complaining about the feed farmer is able to buy. One man found several bags of hog feed which even a hog would not eat. Others complain of how long it takes to get pigs ready for market on the rations available at present. But there are enough optimists so the price of weanlings stays up at a good level. Of course the feed to produce them is also expensive as well as difficult to get.

One of my legs got a kink in it the other night. I asked the doctor about it and he said it was probably a 'Charlie-horse'. However it failed to improve and after he looked it over he said it looked as if I had been kicked by a horse. Lorne said I should

have told him that if any horse kicked me it must have been Charlie's. If the urge towards mechanization continues, future generations will have Charlie-jeeps instead of Charlie-horses. Our veterinarian showed up with a real jeep while the roads were bad and the doctor wished he had one when he tried to get to a neighbour's the other night. I did too because I spent a couple of hours helping to extricate him.

In spite of the late spring we shall have quite a carry-over of hay this year. Some of the neighbours were less fortunate but we did not try to sell any. A reserve one year may disappear the next. If we do get some ahead we plan to grow more grain and balance up that way. Our farm was built up by buying extra hay so it seems as if selling it would reverse the process. Anyway it is a good year to be in a position to devote extra land to grain, providing the weather will allow it. Since barley is the recommended crop, it will stand a better chance than oats. Then too the piece we have to spare is drier than some of them. It should have been plowed last fall but was left in the hope of doing something with some of the rough pasture. The rains have drowned that hope for the time being. The next one is that we may be able to get it broken up a little later and get the stones off in time to sow some fall rye for late pasture.

The way the consumers howled when the subsidy went off butterfat and butter went up part way to where other things were, farmers will need to plan pasture for their cows all through the winter. It is a shame that it was not more clearly understood that the subsidy was always a consumer one, never a producer one. Then at least the complaints might have been directed less at the farmer when the government decided to stop playing Santa Claus (with our own money).

It seems that farmers could have a weather forecast for a few days ahead if they would ask for it in large enough numbers. We thought it strange that there was a forecast on Saturday morning for both Saturday and Sunday but only one the rest of the week. So if we get together and request it, we might be able to take some of the guess-work out of haying. Of course if the forecast continues to be only an occasional day without rain, it won't make much difference but we don't really expect that.

World Food Shortage Continues

Despite world-wide efforts to increase production, early crop conditions in important producing areas indicate the world food supply for the 1947-48 consumption year may be little, if any, larger than in 1946-47, according to the U.S. Department of Agriculture. A survey by the Department's Office of Foreign Agricultural Relations indicates that declines in grain production are indicated in several importing countries but may be offset by increased production in the principal exporting regions.

Such a shift in production will require a somewhat greater movement of grains in international trade during the coming year if supplies in importing countries are to be maintained at the relative low levels of 1946-47. Some increase is likely in the production of sugar, potatoes, and fats and oils but the supply of all of these commodities will continue below prewar. . .

Besides brightening the home and making it a pleasanter place to live, electricity can save time and lighten work by handling many jobs on any farm.

Time to Check Milk Coolers

It's time to get milk coolers ready for summer. Cooling tanks should be cleaned up, cracks in the tank or in the insulation box repaired and water pipe couplings checked to eliminate the chance of getting caught some hot Sunday with a lot of milk on hand and no way of cooling it.

In repairing the tank, inlet and outlet pipes should be arranged so that plenty of cold clean water can circulate through the tank and around the milk and cream cans.

To prevent the rapid growth of bacteria, milk must be cooled immediately to at least 60°F. and preferably lower. The simplest cooling method is to have a flow of cold water through the tank. This provides the "clean, quick and cold" handling needed to produce high-quality milk and cream. Cooling cans of milk by air circulation is not satisfactory because the temperature of the milk drops too slowly, even when the air temperatures are below freezing.

Cellars and caves are not good either. They, like air, do not cool the milk fast enough. Moulds and yeast gain entrance and the temperature is such that it promotes their growth.

The cooling tank should be located in a milk house. If that is impossible, it should be put in a spot protected from sun, dust and livestock. A shaded, grassy area is second choice.

A satisfactory barrel or tank cooler is easy to make, and the slight amount of time and expense required is negligible. Tight fitting covers are essential to prevent dirt from blowing into milk and cream.

Salt Blocks Use Make-Up

Many people believe the reddish brown color of iodized salt blocks is due to their iodine content. This is not true. Potassium iodide, not iodine, is used for iodizing, and it is as white as salt itself. A harmless red pigment is, therefore, also added during manufacture, so iodized blocks may be easily distinguished from plain salt blocks.

U.S. Seeks New Farm Markets

Recognizing that the economy of distribution and marketing has not kept pace with production, the U.S. Congress has taken steps to place marketing and utilization research on the same high pedestal that production research has occupied for almost a century.

The Research and Marketing Bill provides for the development of new uses for agricultural products, the expansion of present uses, and the improvement of market facilities and services. It provides for research not only into long-range problems, but into such short range questions as the immediate improvements that can be made, for example, in grading and processing farm products, and in the whole field of marketing. It authorizes appropriations starting at 9½ million dollars and reaching the impressive total of 61 million dollars in 1951.

THE WOMEN'S INSTITUTES SECTION

Devoted to the activities of the Quebec Institutes and to matters of interest to them

A Month with the W.I.

Interest centres around the subject of Agriculture this month. We find talks on such aspects as "Beautifying the Home Grounds", "Planning and preparing a Hot Bed", "Winter Storage of Vegetables", Early Flowering Bulbs" and "The Need of Education on the Farm". Rollcalls were also related to this topic, such as "Name a vegetable and the vitamin it contains", "Name a vegetable beginning with the first letter of your name" and here is a novel one, "A Four line rhyme relating to something on the farm". Even the lighter part of the programme continued the theme in many instances with contests on jumbled names of flowers and vegetables and seed guessing. The always popular sale, or exchange, of seeds, roots and slips is also noted frequently.

Argenteuil: Arundel held a well-attended meeting. Bronwsburg presented a life membership to their past president, Mrs. W. M. Fletcher. A talk was given by the teacher for Agriculture at the Lachute High School. Frontier featured Home Economics with a paper on "Scientific Research on Food and Vitamins" and a contest on drop cakes. Jerusalem-Bethany welcomed a war bride at their meeting and presented her with a table lamp. Lachute awarded life memberships to two faithful officers—Mrs. Geo. Leggett, president for five years and Mrs. Geo. Lattersfield, seven years as secretary. The members were invited to inspect the new food lockers and a demonstration was given on frozen foods. $75 was donated the Red Cross. Pioneer had a demonstration on making sandwiches and a contest was held on white bread. Incidentally the winner of first prize, Mrs. Wheeler, is the oldest member of this branch being over 75 years of age.

Brome: Abercorn is one of the branches featuring a sale of seeds and slips, with an appropriate rollcall "Name a favorite vegetable and the best way to cook it".

Bonaventure: Port Daniel heard a talk on soap making by the convenor of Home Economics and hints on removing stains formed the rollcall. $2 was given the Junior Red Cross and three resolutions were framed to present at the county meeting. Shigawake is carrying on with the Personal Parcel Plan.

Chat.-Huntingdon: Aubrey-Riverfield featured a demonstration on tea aprons made from three floral handkerchiefs. A paper on Mrs. Roosevelt was given with a few extracts from her book. Dundee is making plans for the W.I. County booth at the Ormstown exhibition, each member donating an article for this purpose. Items by the various convenors formed the programme. Hemmingford reports a most successful minstrel show, $165.99 was realized from two performances with many other requests being considered. A synopsis of a play, "The Importance of being Earnest," by Oscar Wilde, was much enjoyed. $10 was sent to Huntingdon County Hospital and plans are being made to send a box of children's clothing to England. Howick heard an article on "Our Peace Garden" and snapshots of the garden were shown. Ormstown entertained the county president, Mrs. J. D. Lang, who discussed the new Blue Cross plan. A profitable programme was given when all convenors spoke on topics pertaining to their departments.

Mrs. J. Mason and
Mrs. H. Gardner

The two oldest members of Brownsburg W.I.

Compton: Bury presented a gift to their retiring president. A canteen was operated at the Army dance to raise funds to finish paying for cocoa served the school children. Canterbury voted $10 to the Red Cross. A paper on "Our Canadian Birds" was read and plans made to present a life membership to a charter member. East Clifton is another branch that featured the topic of Agriculture, concluding the programme with an amusing contest when all answers had to use a word beginning with "can". Scotstown sponsored a dance, the proceeds going towards X-Ray equipment for their medical centre. A talk on the necessity of pasteurization of milk was given by Dr. Rice.

Gaspe: Haldimand remembered the shut-ins of their community. L'Anse aux Cousins sold tickets on a quilt donated by a member and realized $7 for general

funds. Sandy Beach welcomed two new members at their last meeting. Wakeham had the county vice-president as guest when plans were discussed for a Jubilee programme at the county annual. A letter was read from the county president, Mrs. Miller, who is still in Alberta. A dance is to be held to aid the treasury. York is discussing a lending library between members, also the sending of food parcels to other European countries than Britain.

Gatineau: Aylmer East gave $10 to the Red Cross. Plans were made to aid the Calf Club and for a school picnic. A paper on the control of Warble Fly and a contest on Canadian trees formed the programme. Eardley sent contributions to both the Red Cross and Save the Children. A large quantity of clothing was also sent for children overseas. Kazabazua sent a letter to Mr. Petit asking that every effort be made to furnish electricity in rural districts. A letter was also sent to the School Board pledging support for the proposed new school. The need for more doctors in rural areas was discussed. Rupert planted trees and shrubs in the United Cemetery. Two social gatherings proved financially successful. Wakefield heard a timely address on Canada and International Trade.

Megantic: Inverness donated $10 to the Red Cross. One new member was enrolled and a life membership was presented to Mrs. Robert Graham.

Missisquoi: Cowansville is arranging some evening meetings so business members can attend. $5 each was voted Save the Children and Relief for China. The Citizenship Act was subject of a talk. Fordyce; another programme on Agriculture is noted here with a paper on Asparagus Culture. As a method of raising funds an apron is to be passed around, each member sewing an amount of silver under a patch.

Quebec: Valcartier also featured Agriculture when gardening and the care of young turkeys were discussed. New ways of raising money were planned and a concert is to be held in the near future. A quilt was also made and sold. Members living on the main highway are preparing to accommodate holiday travellers.

Pontiac: Beech Grove had a musical programme, concluding with a musical quiz. Bristol Busy Bees held a quilting bee, the quilt to be sold, and the sum of $10 was donated the Red Cross. Elmside sent a quilt to a fire sufferer and made another for sale. Agriculture again! A paper, "Why I Chose Farming as a Profession", was a feature of the meeting. Short items were also given by other convenors and an apple contest held. Fort Coulonge honored a former member on her 78th birthday. Short items of current interest were read. Shawville also had a quilting and the popular subject, Agriculture, was again to the fore. $35.25 was raised at a tea and $10 for Save the Children. Starks Corners donated $25 to the Pontiac Community Hospital. Pamphlets dealing with planning of meals and other phases of Home Economics were distributed. Quyon held a social evening. Wyman; yes—it's still Agriculture—but here a new note is introduced with a N.F.B. picture "Old Macdonald had a Farm", as part of the programme.

Richmond: Cleveland is having some work done on their hall. A quiz, "Do you know your berries?", and a contest on bread and cookies provided relaxation. Gore paid $27.50 on their share of the county project. Materials were donated and sold and a cushion raffled to aid funds. Melbourne Ridge reports serving lunch at an auction, raffling a basket of groceries and selling doughnuts, as against $10 to the Red Cross and $122 for the county project. A gift to a war bride and a quilt to a needy family are also noted. Shipton presented a life membership pin and certificate to their retiring president, Mrs. Page. A dance is planned and $5 was given the Red Cross. One new member was enrolled.

Rouville: Abbotsford; a lecture, "Thirty Thousand Years in Agriculture", by Mr. C. E. Petch is reported here. Mrs. Smallman and Miss Walker were also recent welcome guests of this branch.

Shefford: Granby Hill sent a box of food to an aged lady on her birthday. Mrs. Smallman's monthly letter was discussed. South Roxton enrolled a new member. The convenor of Home Economics read a paper and conducted a food quiz. A contest "Test Your Values" was enjoyed. Warden held a quilting and donated $5 to the Red Cross. This branch is raising money by means of a travelling food basket.

Sherbrooke: Ascot held a dance to raise funds for the county project. $1 was donated towards paying fee in Handicraft class, given to daughters of W.I. members. Brompton Road donated $5 each to Bible Society and school prizes. Cherry River, three readings here on

Miss Joy Guild of Macdonald College, Quebec, has been appointed to the position of Assistant Demonstrator - Secretary to the Quebec Women's Institutes. Miss Guild graduated in Household Science from Macdonald College in the class of '47, and began work in her new position on June 1st.

"Agriculture", also a beautiful prayer was read. Lennoxville is sending another collection of clothing to the Unitarian Service. Many of the members attended the local handicraft class. Milby enrolled two new members. The convenor of Education conducted a Bible history quiz and a shower and sale were planned. Orford is packing a special box of baby clothing for overseas. A gift was presented the retiring president and sunshine bags distributed among the members.

Stanstead: Ayer's Cliff is planning a waste paper drive and reports two new members. Beebe is also arranging for a paper drive. A card party and food sale will be held in the near future. A film showing formed the programme. Dixville is planning to beautify the grounds of the town hall. An auction is being held to raise funds to support their adopted boy in France and a "birthday box" is started, to be opened Nov. 1, proceeds for the Q.W.I. Service Fund. Minton had an original idea for their programme on the current topic, a contest making as many words as possible from the work "Agriculture". Hatley read an article on Canadian Citizenship. North Hatley presented a gift to Mrs. G. Kezar in appreciation of her service to the W.I. A jumble sale is being planned. Stanstead North had a guest speaker who gave a talk on new time-saving kitchens. Tomifobia voted $5 to the Red Cross and $6 for school prizes. A box of clothing was packed for Save the Children. Way's Mills also reports plans for a paper drive and a sale to raise funds. $5 was voted the Red Cross.

Viscount Mountbatten of Burma and Romsey

Broadlands—Home of the Mountbattens

Sometime ago Canada was presented with one of the Japanese surrender swords by Lord Louis Mountbatten, in recognition of Canada's aid in the flying in of supplies in the Burma campaign, and I wondered how much we in Canada knew of this distinguished man.

Born into a family with royal connections, Lord Louis joined the Royal Navy as a cadet at the age of 13. Five years later at the end of the Great War, he was a sub-lieutenant in a submarine flotilla.

At the outbreak of the recent war, he was in command of the destroyer "Kelly" and became a legendary figure, whose exploits thrilled the world.

Lord Louis' next command was the aircraft carrier, "Illustrious". From that he became head of the Commandoes and shortly after Chief of Combined Operations, with the task of finding a way to invade Europe. Among the many inventions resulting from Mountbatten's stimulus were "Mulberry" (the famous artificial harbours) "Pluto" (pipe lines under the ocean) and "Mattress" (the landing craft mounting a rocket battery). He was not, however, allowed the satisfaction of watching the success of the invasion for in August 1943, he was appointed supreme commander in South East Asia.

Lord Louis completed this task and received the surrender of the Japanese at Singapore, when only 45 years of age.

Last November he became the youngest president of the British Empire Service League. But a higher honour awaited him, that of Viceroy of India, which meant relinquishing his beloved navy. This post has always been the biggest jewel that the British Government could offer as a reward, and it is hoped that this man with his vast experience, and knowledge of the languages and peoples of India, may be the one needed to help India make a wise decision in her new government.

Viscount Mountbatten married Miss Edwina Ashley of Broadlands Romsey, god daughter of King Edward VII. He is high steward of the old town of Romsey and recently his daughter was married in the old Abbey there, an abbey that has held continual service for 1040 years.

The Mountbattens are delightful people and Lady Mountbatten is very interested in the Women's Institute. Last year she lent the Park at Broadlands for a large county rally, which was organized by the Hampshire Federation of Women's Institutes, making a charming speech at the opening ceremony.

Ancient Romsey Abbey

Final Report For War Services

by Dorothy Ellard

Argenteuil: 3 branches reporting. Bundles for Britain 8. All have adopted Personal Parcel Scheme. Poppies sold 15.95. Cash Red Cross $25. Receptions for war brides, cost $75. Red Cross Swimming Fund $126. Salvation Army $10. Grace Dart Home $10. Laurentian Sanitoria $10. Can. Anti-Tuberculosis Fund $10. Girl Guides $15.

Compton: 6 branches reporting. Cash to Red Cross $26. War Certificates $25. Can. Legion $10. Overseas Club $25. Gifts to Jr. Red Cross, Silver spoons to war brides. Sewing for Red Cross 35 articles and 3 quilts. 16 Personal Parcels.

Chat.-Huntingdon: 3 branches reporting. Bundles for Britain. 36 Personal Parcels. 3 quilts for war brides. War Bonds $100. War Certificates $20. Red Cross knitting 30 articles, sewing 47.

Gatineau: 5 branches reporting. Bundles for Britain sent by every branch, all branches have also sent Personal Parcels every month. Receptions for returned men, one branch giving $75 for this purpose. Red Cross knitting 57 articles, sewing 104. 42 articles made for a returning bride. War Bonds $300. Cash to Red Cross $15. Cash to Save the Children $8. Crib quilts and clothing also sent to Save the Children. 4 parcels sent to needy aged people in England. One branch, Aylmer East, donated a trunkful of clothing to a bride returning to Scotland, helped outfit the baby, gave enough condensed milk to last the baby until it reached home, also medicine for mother and baby.

Montcalm: 1 branch. Bundles for Britain, a great deal of clothing sent. Personal Parcel every month. Arranged for a soldier's wife to go to hospital and arranged for the care of 4 children. Home cooking sent to wounded returned man. Adopted a child under Save the Children.

Richmond: 3 branches reporting. Personal Parcels 4. Cash to Red Cross $45. Shower for war bride. 13 cartons donated in clothing drive.

Rouville: 1 branch. Personal Parcels 8. Sewing for Red Cross. 315 articles sent to England to help in a sale to assist a bombed church. 750 lbs. clothing in clothing drive.

Sherbrooke: 4 branches reporting. Red Cross knitting 108 articles, sewing 925, quilts 3. Personal Parcels one a month. Save the Children $7. Red Cross cash $30. Salvage drive. Clothing collected for drive. War Bonds $50. Gifts given 17 war brides. Legion Home $5. Seeds to Britain $3. Reception and gifts to veterans. 272 meat coupons sent in.

Shefford: 3 branches reporting. Red Cross knitting 12 articles, sewing 30. Personal Parcels 7. Cash to Red Cross $13. Reception for war bride. 3 large cartons clothing sent to Montreal, Austria and to a Hungarian minister for the needy in his parish. Stamps to Jr. Red Cross.

Stanstead: Red Cross work. 3 quilts. Save the Children $60 in cash and 9 parcels. 2 Bundles for Britain. Personal Parcels each month. Reception for war brides, 9 presented with a gift. 57 meat coupons sent in. 17 boxes clothing sent overseas.

Missisquoi County

by E. L. Drennan

Selby Lake

The beautiful county of Missisquoi nestles under the Green Mountains in their very foothills. The terrain is rolling and full of little lakes and steams spaced by green and fertile valleys. The streams abound in silver trout and in the fresh water lakes are found small mouth bass, northern pike and doree.

During the year 1866 this county was one of the counties invaded by the Fenians. They came across the Vermont border near Frelighsburg, where they ransacked the local lowing the Connecticut valley up through Vermont into department store, strung ribbons through the streets like little boys playing pranks on Hallowe'en. However the next time the people around that district were warned when to expect the arrival of these pranksters, so they armed themselves and prepared to defend their homes. The Home Guards, as they called themselves, and the Fenians met at Pidgeon Hill in 1870 and these grimly determined men showed the Fenians they meant business. There was one shot fired by the Home Guards, a flag of truce raised by the Fenians, who collected their dead and departed.

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LIVING AND LEARNING

Farm Forums Take Stock at Spring Rallies

by Joseph Galway

Nothing makes one more conscious of the difficulties under which farm people operate than a few days field work in the spring. But it takes more than a few mud holes to stop what has now become an annual event in rural Quebec. Farm Forum Rallies of county or district proportions bring to a conclusion a season of study and action in an evening when old acquaintances are renewed and achievements are compared.

We have become accustomed to an attendance of two or three hundred farm people at these meetings, but when they still come in the midst of an unseasonal snowstorm, it's something to be proud of.

McInnis Speaks at Knowlton and Lennoxville

The forums in Rouville, Shefford, Missisquoi and Brome filled the auditorium of the Knowlton High School in just such weather. Demonstrating how, as Forums become established in a county, leaders are developed, the program of the evening was ably directed by local people. Mr. Gordon Wade of Granby Hill Forum was chairman. The high point of the evening was an address by Mr. Charles McInnis, President of the Ontario Hog Producers Association. During his talk he said that farm people have done an excellent job of producing, but have fallen down badly on the job of marketing their products. It was in the same vein that Mr. McInnis addressed a Forum Rally in Lennoxville the following evening. Two hundred and twenty-five farm people from the surrounding counties listened to the advantages and the possibilities of organizing the Concentrated Milk Producers of the area. A continuing committee was set up and definite arrangements made to form an association. Again there was ample evidence that farm people are better qualified to look after their business in an organized way when they are participants in a local farm forum.

A small but interesting Rally for the Forums around Lachute was held in the High School Auditorium. Stuart Armstrong, President of the Quebec Council of Farm Forums, chaired the meeting. Moving pictures were shown and the Provincial Secretary gave a short report of the year's activities in the Province. The County Committee met following the rally and made some definite plans for the Forums this summer.

Pontiac Forums Hear Nicholson

The weatherman was much kinder the following week. Pontiac Farm Forum people came in large numbers to Pine Lodge in Bristol to review the season's Forum activities and to hear Mr. W. G. Nicholson, President of the Ontario Co-op Union. Basing his talk on a film "The Power of Neighbours", Mr. Nicholson said that it's only when people work co-operatively and toward a common goal that they are able most effectively to gain their objectives. Six new Forums, organized early last fall, increased the county's total to sixteen.

The English-speaking farm people in Gatineau County always enjoy a Forum meeting of any kind. Over two hundred filled the Farrelton Parish Hall Hall to participate in an excellent evening's program. The only Rally of the season boasting two guest speakers heard Mr. Colin Groff, Secretary of the Canadian Federation of Agriculture and Mr. James Young, Assistant Agricultural Advisor to the United Kingdom's High Commissioners Office. Both men were impressed with the general feeling of interest in farm organizations expressed by Forum members in the discussion following their speeches. A resolution submitted from the floor and passed, asked for a Canadian Health Plan.

The only Forum Rally not attended by a representative of the Provincial Office was held in the Ormstown High School. Forum members in the counties of Chateauguay-Huntingdon joined with the local Women's Institute for a program of amateur public speaking. Reports indicate a very successful and enjoyable evening.

The spring Forum Rallies bring to a close the season, but they are also the starting point for a new year. County committees elected by the Forums take office at these gatherings and the Councilmen are elected. Some excellent planning has been done for summer activities. They include picnics, trips, demonstrations and field days.

Seek to Organize Farmers Shipping Milk to Condenseries

The farm forums of the Counties of Compton, Richmond, Stanstead and Sherbrooke met recently in the Gertrude Scott Hall, Lennoxville, to hear Mr. McInnis of Iroquois, Ont., vice-president of the Ontario Concentrated Milk Producers Association, discuss the organization of a milk producers' association. During the course of his remarks, Mr. McInnis pointed out that the farmers of Canada were competing on a world market. As such, they must produce as efficiently as possible and then market their produce in the best possible manner. He advocated setting up a marketing service for the sale of all farm produce but said particular attention should be paid to milk being sold to condenseries.

As a result of his talk, the meeting set up a committee to organize the farmers in the district who are shipping milk to condenseries.

The meeting was under the chairmanship of W. G. MacDougall, agronome who called on Jos. Galway, Secretary of Farm Forums MacDonald College, to introduce the guest speaker. There was a note of regret that this was the last meeting in this district that Mr. Galway would be attending as Secretary of Farm Forums for Quebec. Mr. Galway has been promoted to the post of National Farm Radio Forum Secretary. However, the meeting expressed its sincere wishes for his success in his new position.

Mr. Galway outlined the work done by the Forums. He thanked the members for their co-operation and expressed the hope that they would give his successor, Floyd Griesbach, their whole-hearted support.

There were over 220 people present from the four counties, and everyone was anxious to start the project at hand. After the business meeting, those present adjourned to the absement, where refreshments were served.

Holiday Resort For Farmers

Something new in co-operatives is being established on Bass Lake, four miles west of Orillia. It's a tourist resort for farmers.

"The idea is to enable farmers to take a holiday before they're too old to enjoy it," explained W. J. Wood, Alliston, chairman of the Simcoe County Federation of Agriculture committee planning the resort. "We're going to give farmers a holiday at cost."

Eighty-five acres on Bass lake have been selected, and shortly stock will go on sale to members in order to raise the $25,000 necessary just to start the thing. At least 50 cottages and a community kitchen are planned.

"We hope to start work right away," said Mr. Wood, 70, and a farmer all his life, "and we hope that by 1948 our tourist resort, with full boating, fishing, camping and other recreational facilities will be ready." He said it was hoped eventually to develop the site into a rural "educational and cultural centre."

"We are planning an auditorium, central recreational hall and a museum to display the relics of the area. Besides giving the farmers a holiday at cost, we will teach them folk dances and handicrafts and provide them with facilities which have been beyond their reach up to now."

"We hope to render a real service to the working people," Mr. Wood asserted. "A great many people reach my age without ever having a holiday. Many farm people grow up with the idea they are born only to work, and they keep putting a holiday off until they're too old to enjoy one. We want to change all that."

Mississquoi

(*Continued from Page 32*)

With the tall hills for protection the warm winds, following the Connecticut valley up through Vermont into Canada, make the area along the border excellent for raising apples. Philippe Roy has one of the largest apple orchards in the province of Quebec. It is located on the slopes of Joy Hill, a long hill sloping down into the little valley of Frelighsburg.

There are many industries in this county. At Bedford on the Pike River the Torrington Co. manufactures needles. At Farnham, an important rail centre on the Yamaska River, are located Barry & Staines, Linoleum; Collins and Aikman Ltd. textiles; and Robt. Wilkins, strong working clothes. Cowansville, a thriving town built on the Yamaska River, is very picturesque, the buildings following the river as far as Sweetsburg. Here the Vilas Furniture Co. paint, paper products and signs; Bruck Silk Mills beautiful draperies and dress materials, and Footwear Findings Co. shoe laces. Cowansville is a popular centre for golfers and skiers.

The Institute members in Missisquoi County, wives of business men and farmers, are very congenial. They have one thing in common, that is to learn how to be better home makers and to help our several communities. There are four branches St. Armand, Cowansville, Stanbridge East and Dunham. The last branch, Dunham, has the honour of being the first Institute in this province, organized in 1911 with the late Mrs. Geo. Beach of Cowansville as president.

Putting Farm Ponds to Work

Farm ponds are good for more than swimming. Some farmers use them to supply water for livestock, fire control, irrigation, spraying, boating and landscape beautification, as well as fish growing.

THE COLLEGE PAGE

The Third Group of Rural Repair Shops Course Students Graduates

Regular students in agriculture at the College leave in the spring and come back in the fall, but the Rural Repair Shops Course for Veterans does not stop for summer vacations. This course is conducted by the Department of Agricultural Engineering and consists of six months training in the variety of skills needed in rural repair work. The first course was opened in January 1946 and the class leaving at the end of June is the third one to graduate.

The work consists of two lectures every morning, while the rest of the day is spent in the shops. Subjects taken are Farm Machinery, Farm Tractors, Electric and Oxy-acetylene Welding, Blacksmithing, Machine Shop Work, Arithmetic, and two lectures a week on Agriculture.

Many of the men of the first two classes already have set up shops of their own, and report that they are exceedingly busy. There is a tendency for the men to form partnerships, which seems a good idea. It permits the pooling of capital in the buying of equipment and provides two trained men to carry the work load, which is certain to develop quickly where any of these more modern shops are set up. One pair of students who have gone into business at Winchester, Ontario, have added woodwork and harness repairing to the other repair processes taught in the course.

While some blacksmithing still is necessary in farm repair work, much of the work formerly done at the forge can be done better and more quickly by electric or oxy-acetylene welding. Also, in machinery repairs a lathe is almost indispensable. With welding and a lathe, broken shafts can be repaired by welding and turned down in the lathe, while worn shafts are built up and turned down to size in the same way. The blacksmith cannot do anything with cast iron or malleable iron machine parts, but the welder can make broken gears, sprockets and other castings as good as new. The value of such repair service in farming communities is apparent at once.

Staff and students of the third Rural Repair Shops course. Instructors in the front row are Prof. L. G. Heimpel, director; Prof. J. H. Cooper, mathematics; W. J. Bourne, farm machinery and tractors; A. Lindsay, forge shop; I. W. Knight, welding and machine shop work.

When this course was started at Macdonald College it was hoped that there would be a demand for it for a number of years, but the fact that returned men with farm experience readily find employment at present, together with the regulation that all veterans wishing such training must apply for it before the end of this year, makes it appear that the next class will be the last. This class will open July 7th. Any veterans wishing to take this training should write immediately to The Director, Rural Repair Shops Course, Dept. of Agricultural Engineering, Macdonald College, Que., for an application form. It is also necessary that such veterans consult their district office of the D.V.A. in connection with the course and the financial assistance to which they are entitled.

There are still a few vacancies in the next class, but since the number is limited to twenty-four, new applicants will have to act quickly.

Prof. Frank K. Hanson received the degree of Doctor of Music at McGill Convocation on May 28th. In the long history of the McGill Conservatorium, only ten Mus.D. degree have been granted, and Prof. Hanson's is the first since 1931.

Says Agricultural Colleges Are No Longer Cinderellas

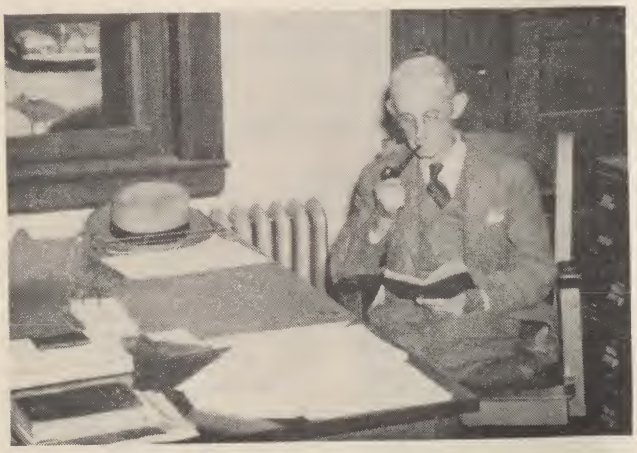
Agricultural colleges, once the Cinderellas of higher education, have now come into their own, and can be regarded among the aristocrats of the educational world. So Dr. W. H. Brittain, vice-principal of Macdonald College, told the graduating class at the Nova Scotia Agricultural College, Truro.

"In the highly-complicated and mechanized business that farming is fast becoming, farm boys equipped with the best that the Colleges can give, are winning an enviable place for themselves as progressive citizens of our rural communities," stated the speaker, who pointed out that while it was important that graduates should return to the business of farming, it was also recognized that there is a pressing need for investigators of rural problems, whether of production, protection from pests and diseases, marketing, management or farm policy. As a result, many graduates had entered these fields of endeavour where they are performing invaluable service to agriculture which their background, experience and training has fitted them to do.

"We, therefore, honour the graduate who returns to the farm, but," Dr. Brittain added, "we should never deplore the fact that others are performing distinguished services to agriculture and to their country in other fields."

In touching upon agricultural education generally, Dr. Brittain advanced the suggestion that the value of the course in agriculture as a training for life has had too little emphasis. Dealing with the fundamental problems of life and death, growth and production, with physical, biological, economic and sociological bases of our society, Dr. Brittain contended that agricultural education affords, by long odds, the best all-round education for life that anyone could have.

"The graduate will find that this fundamental training and this capacity to deal with general ideas will stay with him long after all his painfully accumulated facts are forgotten," the speaker concluded.



On his last day at Macdonald College, Archie Walker looks over the book in which he entered the first sale of flowers from the greenhouse—on October 15, 1908.

Macdonald College Graduates of '47

The B.Sc. (Agr.) class

The B.Sc. (H.Ec.) class

Ontario Plans Leadership Camp For Junior Farmers of Province

Ontario is to hold a summer camp for Junior Farmer Leadership Training, during the first week of September. One boy and one girl from each county and district of the province are expected to attend, says Hon. T. L. Kennedy, Ontario Minister of Agriculture.

Col. Kennedy said he was proud of the educational work being done by the Junior Farmers, and envied them the opportunities which would be theirs in the future.

"This great province is your inheritance," said the Minister. "No other part of the world possesses so many resources of timber, of minerals and of fertile soil. It is your duty to explore and develop these resources and to think, not of yourselves, but of what you can do to make other people happier."

SUMMER

Heat shimmering over green fields . . . the good smell of rain on warm earth . . . and of drying timothy and clover . the barn a shadowy refuge from the sun . . .

Time now to be making arrangements for extra help, for harvesting and threshing crews . . . and money to finance operations till the crop is sold. Money to meet this need is always available at the Royal Bank. Call on your nearest branch manager and discuss your loan requirements with him. Ask him, too, about Farm Improvement Loans and how they can be used for the benefit of the farm, the farmer and his family.

THE ROYAL BANK OF CANADA

58 BUSHELS *MORE* PER ACRE

THAT'S the average increase in Maritime Province potato fields that were sprayed or dusted with Green Cross DDT Basi-Cop* blends last year. In some test plots, the yields were up as much as 138 bushels per acre compared with check plots when regular materials were used. That *increase* in cash returns averaged *five times* the cost of materials used.

There's no secret to it. It's just the story of efficient, economical, modern protection for crops. Modern protection with Green Cross Field Leader Products . . . developed and manufactured by the largest insecticide organization in the world.

Get this increase from *your* fields this year. Use these Green Cross products every 10 days until ready for top kill.

GREEN CROSS

14% DDT BASI-COP* SPRAY POWDER

A combination insecticide-fungicide that will provide your potatoes with *complete* protection against most common potato pests, including early and late blights, Colorado potato beetles, flea beetles and leaf hoppers. It consists of a skilful blend of Basi-Cop* (tri-basic copper sulphate) and Micronized* DDT. Use at the rate of 7 pounds to 100 gallons of water.

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3% DDT BASI-COP* DUST

For those who prefer dusting to spraying, this product offers the same characteristics and performance as above, in a ready-mixed dust.

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